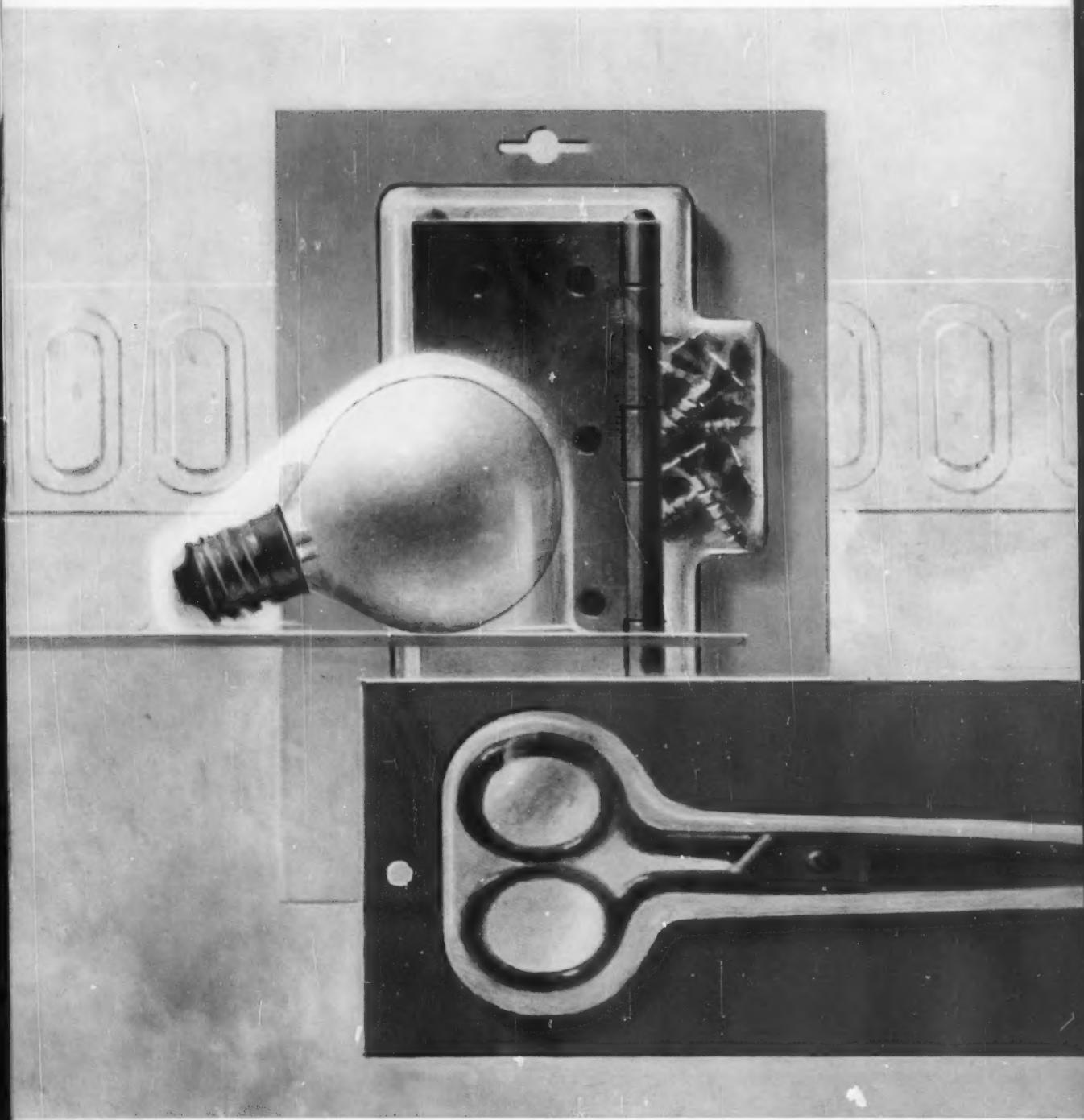
MODERN PACKAGING



AN ORIGINAL OIL PAINTING FOR MODERN PACKAGING BY WALTER MURCH

GREAT PACKAGING DISCOVERIES: *The thermoform—p. 114*

SEPTEMBER 1959

Background for Packaging, p. 41 | *World Report, p. 91* | *Editorial Memo, p. 97* | *Complete contents, pp. 2-3*

NOW! INSTANT BONDS ON IMPERVIOUS SURFACES

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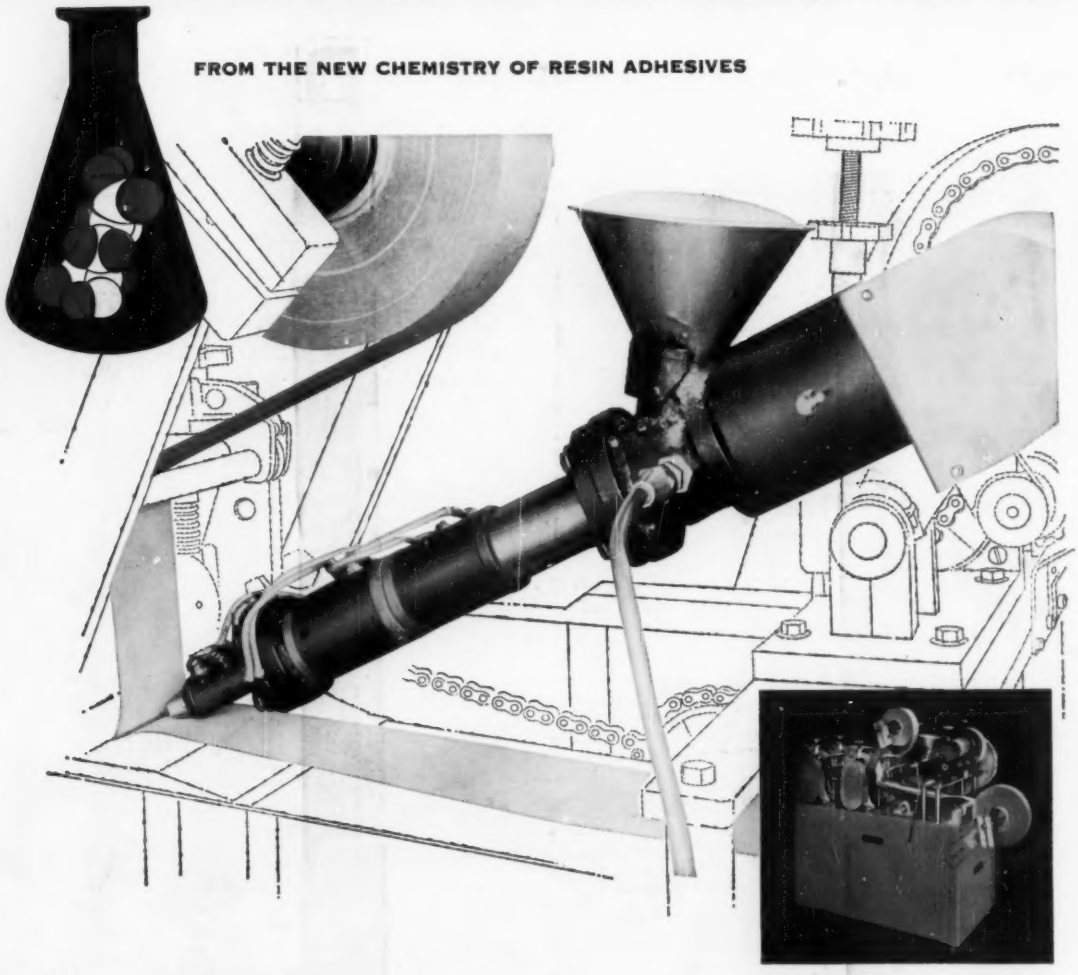

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A spectacular advance for packaging! An instant bonding, 100% solids, resin adhesive for polyethylene, foil, wet strength kraft and other tough stocks. For unlimited machine speeds. Any stock. Immediately available with National's INSTANT-LOK Granular Hot Melts and the new INSTANT-LOK Applicator shown above on a demonstration model.

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INSTANT-LOK BONDS are suggested for bag seaming, carton sealing and forming, tube winding, and other converting operations. We're ready to work with you right now!

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All these advantages, positive heat seals, no pinholes, grease resistance — and lots more — are yours with a PLIOFILM laminated package. For further information, write: Goodyear, Packaging Films Dept. I-6418, Akron 16, Ohio.

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Pliofilm, a rubber hydrochloride—T.M. The Goodyear Tire & Rubber Company, Akron, Ohio

SEPTEMBER 1959 VOL. 33 NO.

IN THIS ISSUE

99 **The price-marking problem**
The cost of stamping retail price on a package is equal to two-thirds of the average net profit reported by the supermarket industry. That's one big reason for the growing trend toward factory pre-pricing. But there are objections to the practice. Here is a detailed pro and con discussion, accompanied by descriptions of pre-pricing methods already adopted in production-line operations.
General interest.

104 **New rotary principle for aerosols**
In a giant step toward high-speed automation of aerosol packaging, Shulton has developed a non-refrigerated line that fills, closes and pressurizes 120 cans per minute. The space-saving installation costs the same as a single cold-fill line capable of half that output. Fewer attendants are needed, so there's a big increase in output per manhour.
Special interest: foods, drugs, toiletries, insecticides and deodorants.

107 **Tear strip all the way**
New packages for P&G's Duncan Hines cake mixes mark a milestone in tear-strip opening convenience. Both the outer, tight-wrapped carton and the inner film bag can be opened by pulling on tear tapes. The inner tape uses new principle that eliminates a long-standing difficulty in opening polyethylene.
General interest.

108 **Schrafft's goes to the supermarket**
In a move to expand the market for more than 200 food and candy items, this restaurant chain adopts packages for concession-operated departments. Package design plays down illustrative treatment to express quality through solid-color elements in combination with large white areas.
Special interest: foods, candy, supermarket chains.

112 **Quick-change cartoner**
Birds Eye achieves flexibility in high-speed cartoning with a compact, horizontal, cam-action machine. Only 12 ft. long, it combines fully adjustable carton set-up, loading and closing components. The unit applies outer waxed cartons to two trayed and panned frozen products (of different shape and size) at a 27% and 20% increase, respectively, over previous line speeds.
Special interest: foods.

114 **The thermoform**
A *Great Packaging Discovery*. The principle of thermoforming, which burst upon the packaging field in 1952 as a new discovery, actually goes back more than 20 years. It began in 1938 with Lederle Co.'s plastic-domed counter merchandiser for bottled vitamins. Out of the early failures and crude successes that followed sprang a packaging form that last year consumed 15,000,000 lbs. of plastic film and sheet for some 3 billion packages.
General interest.

118 **2,000 cans a minute!**
Applicable to any large-volume user of cans is the economical automated system being used by Miller Brewing for unloading and feeding empty cans from pallet loads. Without a human hand touching them, cans are removed from trucks, depalletized, aligned and conveyed across a railroad yard to the fillers. It saves labor, cuts can-maker's packaging and handling costs, ends in-plant storage of empties.
General interest.

126 **Automatic labeler with flexibility**
A machine that applies spot labels of varying shapes to glass jars at up to 150 per minute has been installed by Brown-Miller, a Texas pickle packer. Featuring fast change-over, the new unit turns jars on their sides to affix labels, sets

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"The American way."

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OF MODERN PACKAGING®

them upright afterward. The labeler doubles the packager's production by employing a smooth and continuous rotary motion that avoids machine wear and damage to containers.
Special interest: foods, beverages, drugs, toiletries, soaps, insecticides, deodorants, paints, oils.

129 **Bundling in PVC**
Electric Auto-Lite slashes costs dramatically by adopting a transparent polyvinyl chloride film overwrap for automotive parts. The film is automatically folded and heat sealed over six cartons of replacement parts. Cost of unprinted overwrap is 90% less than that of the manually loaded carton formerly used; cost of the packaging operation has been trimmed another 25%.
General interest.

130 **Versatility in a blister machine**
Big economies—in packaging-material costs and in production—are gained by American Safety Razor via a two-section blister former, filler and sealer that fits the hang-card package to both high-volume production and premium application. It permits automatic packaging of a single product at up to 92 units per minute, automatic packaging of five different products simultaneously, hand loading and automatic sealing of complex combinations at speeds of more than 50 packages per minute.
Special interest: housewares, hardware, appliances.

136 **What worth packaging education?**
Each year since 1955, graduates of Michigan State University's pioneer School of Packaging have gone directly into responsible packaging jobs. Here are the stories of eight typical alumni, telling what they mean to their employers and how university training has prepared them for their careers.
General interest.

140 **Cohesive sealing goes automatic**
Here's proof that cohesive paper can now be handled speedily and economically in big-volume automatic packaging operations. A Chrysler division is daily turning out 22,500 "MoPar" automotive accessories packed in cohesive paper, using two types of cold-sealing machine. Packaging speed is up, material and production costs have been slashed.
Special interest: hardware, small parts.

TECHNICAL & ENGINEERING

145 **Flexible packages for processed foods**
The development of flexible packaging that will withstand thermal processing as well as the metal can was the subject of recent experiments by the Quartermaster Food & Container Institute. Film laminates with foil were found to give adequate performance with regard to moisture and gas permeability and in long-term protection of sliced peaches and beefsteaks. *By Robert G. Keller.*

150 **Improved pliability tester**
A streamlined laboratory instrument that is 97% accurate in measuring the wrappability of flexible military-specification materials has been developed at Picatinny Arsenal. The compact new device establishes pliability as a distinct property in evaluating the acceptability of barrier materials. Average pliability values are found not to change appreciably due to aging of the material. *By Mario E. Gigliotti and Howard M. Weiner.*

156 **Questions & Answers**
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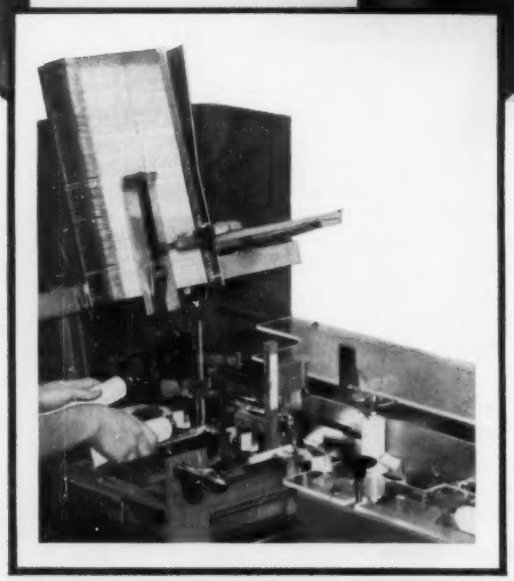

- **one operator can produce 45–60 filled packages per minute—a *whole-job* operation**
- **convenient size—30″ wide, 70″ long, caster mounted—weight 750 lbs.**
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Just one operator can turn out 40-50-60 packages a minute with this low-budget, whole-job REDINGTON...

Now, just *one* compact, efficient machine—with just *one* operator, will give you 10,000—15,000—18,000 finished packages a day. You waste no plant space, carry no extra investment burden for multiple machine units, to get the production boost and the cost cuts made possible by REDINGTON's *entirely new* Automax Cycle Cartoner.

For a main product, supplementary items, special sizes, introductory and sample packages, fill-in runs—if you package in reverse tuck folding cartons, Automax does the *whole packaging job.*

Remember, with only one operator you'll be getting a volume it takes two, three or more to produce manually. In plants where this new REDINGTON is already in daily production, it is turning out a steady 40 to 50 packages a minute, all day long.

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automax COMBINES SIMPLE DESIGN WITH HIGH EFFICIENCY

Any girl can learn how to operate an Automax in far less time than it takes to train workers for manual packaging. In addition to keeping the carton magazine filled, she performs just two actions: she places an item to be cartoned in each of three loading troughs in front of her—then pushes the slide forward and back.

Automax does all the rest automatically—feeds and forms cartons, places them in the carton conveyor pockets, tucks in the end flaps after the items are inserted, discharges the finished packages, restarts the cycle.

REDINGTON Automax® CYCLE CARTONER

Caster mounting lets you move your Automax easily wherever you need it in your plant to fit in comfortably even where floor space is limited. And it's easy to service, easy to adjust by ordinary plant personnel—it doesn't take a master mechanic to handle the job!

Automax is built with all the engineering skill, attention to details and insistence on top-quality materials which have made REDINGTON equipment world-famous wherever automatic packaging is performed. That means you're sure of long, trouble free service.

You can have an Automax installed and turning out steady production for less than $5,000! Compare this with what you pay one employee annually—not to mention overhead on that expense. And remember, no supplementary machine investment is required—you get *whole-job cartoning* with the single efficient Automax unit!

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An illustrated folder tells the whole story of the new Automax—specifications, method of operation, capacity, etc. Send for your copy today!

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Dobeckmun skill and creativity with polyethylene packaging has helped give hundreds of products the competitive edge at point of sale . . . and the flavor edge at point of serving. Dobeckmun design and printing create packages that make the promise of goodness, and air-tight, moisture-proof Dobeckmun polyethylene protects the flavor and freshness that keep it! Put Dobeckmun packaging skill and durable, low-cost Dobeckmun polyethylene to work for you on the store shelves and dinner tables of America with Packages for Performance by THE DOBECKMUN COMPANY, A Division of The Dow Chemical Company, Cleveland 1, Ohio • Berkeley 10, California • Offices in most principal cities.

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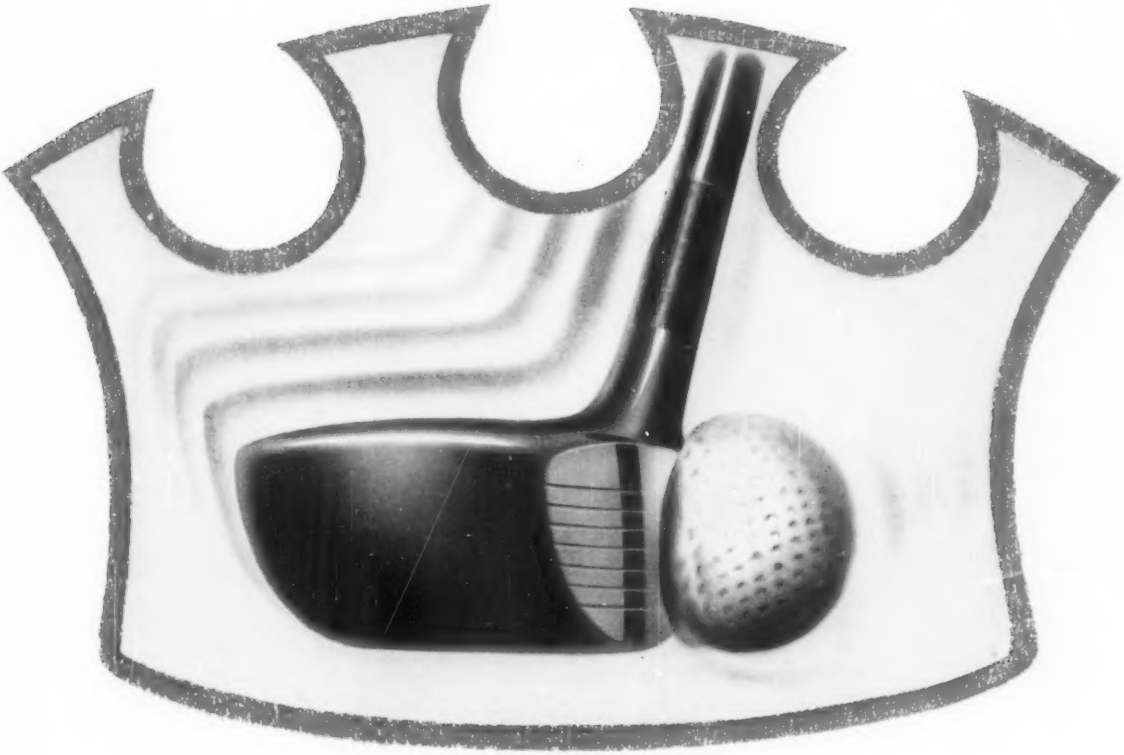

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Product protection that never lets the customer down is Riegel's business. We offer you a choice of more than 600 different materials... designed for protection first... with equal stress on low cost, high packaging speed, and eye-catching appearance. Papers, foils, films and combinations... waxed, coated, printed, or plain... tailor-made to your needs. Riegel research and manufacturing versatility can help your sales. For technical advice or samples, write to Riegel Paper Corporation, 260 Madison Avenue, New York 16.

Brach's new Milk Chocolate JOTS are carefully and colorfully protected by a special Riegel Pouch paper, gravure printed in 8 colors and heat-seal coated. Formed and filled on pillow packaging equipment.

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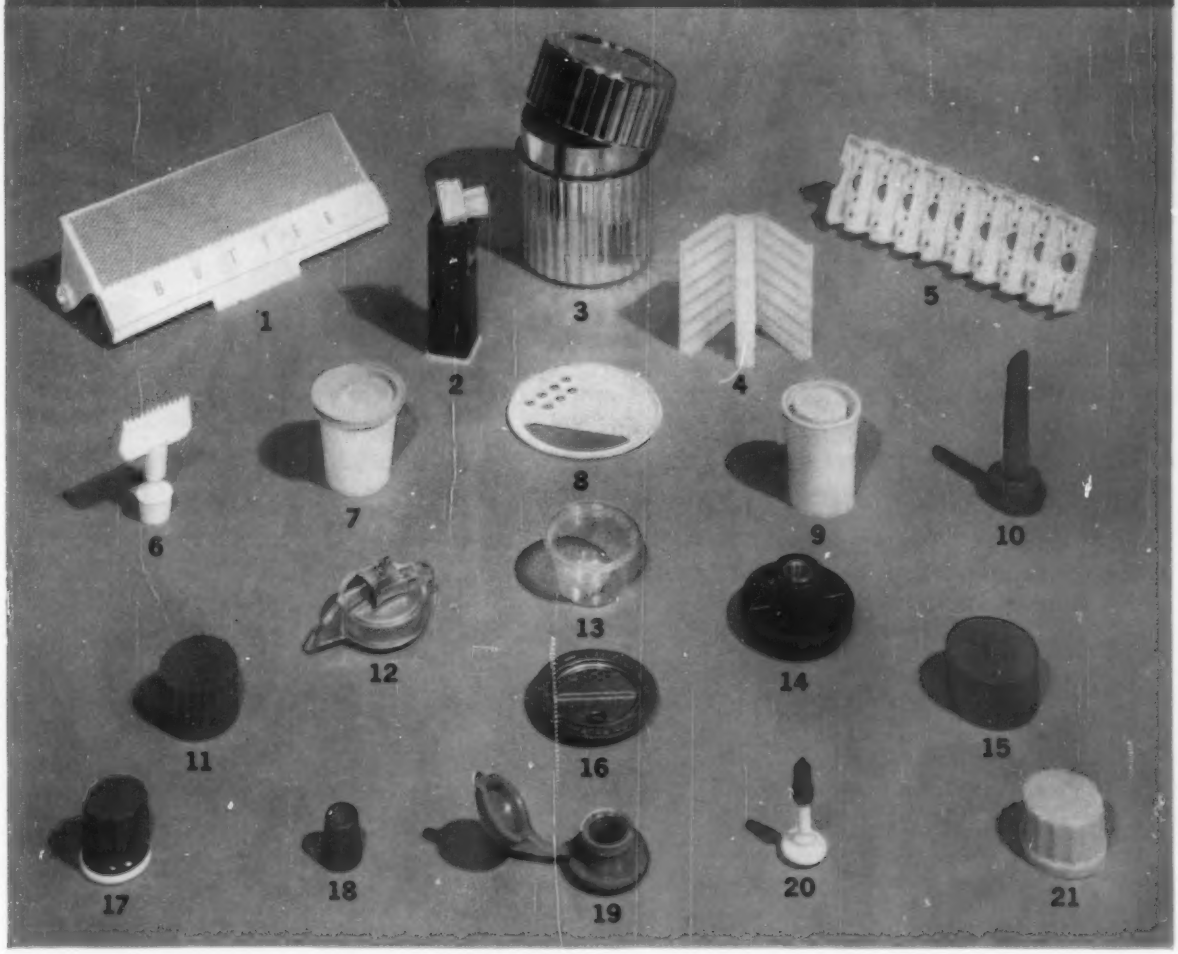


Here are 21 examples of Canco's skill in plastic injection molding. Each is contributing a new consumer appeal to the product—and new economy to the manufacturers.

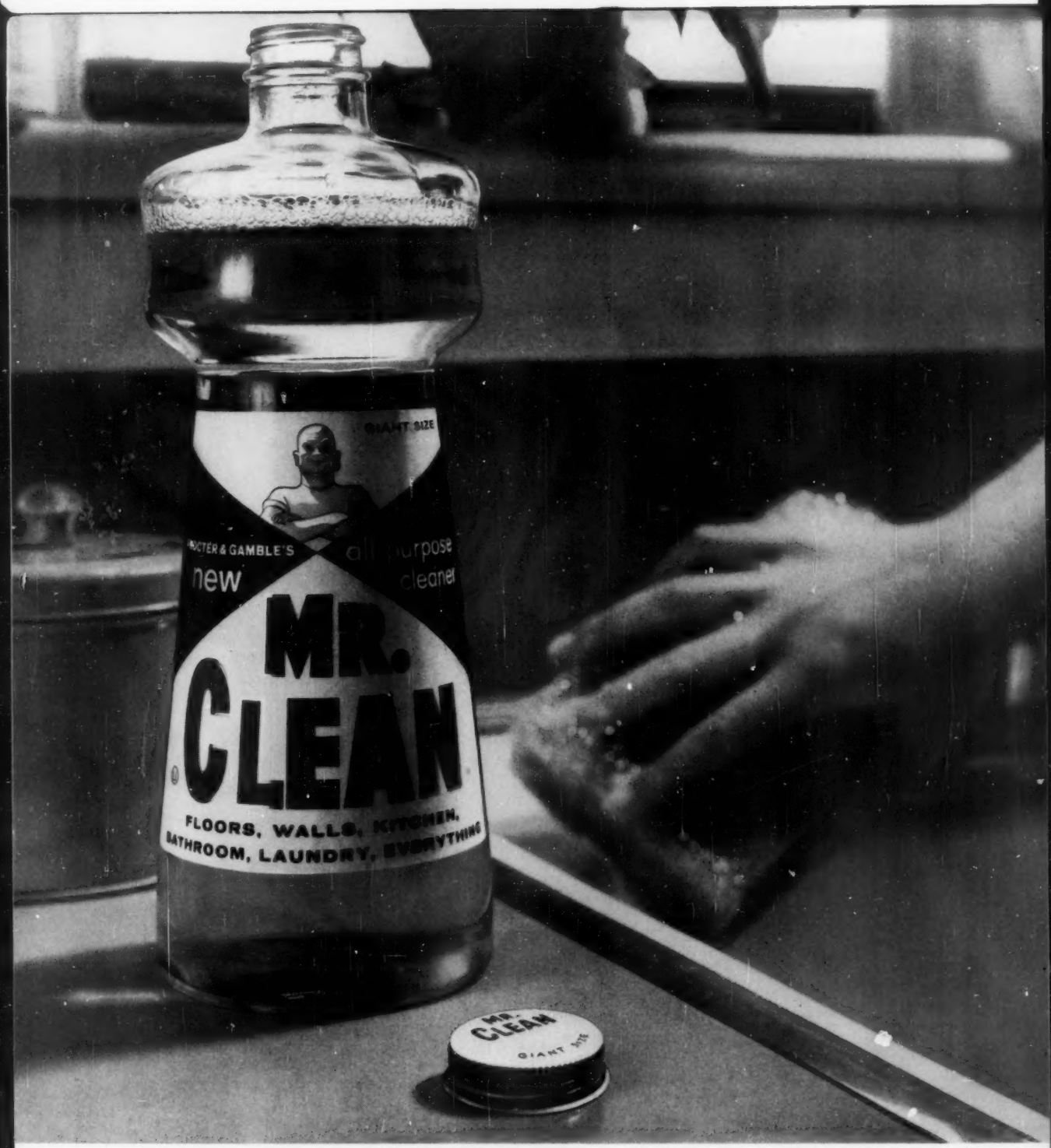
How many can you identify? You will find everything from a butter door for refrigerators—to a unique container for spot cleaner, complete with brush! Check the list in small print at right—after making your guesses.

Canco's creativity is yours—so are Canco's magnificent design engineering and toolmaking facilities. Whatever your new product ambition or product problem—if it is plastics, COME TO CANCO FIRST!

Call any Canco office collect, or write us, to get the benefit of Canco's experience in high-speed packaging and the design of molded plastics!

1. Refrigerator butter door **2.** Spot cleaner container **3.** Closure—cigarette box **4.** Suppository container **5.** Electronic switch holder **6.** Wave spray and comb **7.** 1-oz. disposable cup **8.** Flour sifter dredge **9.** New product closure **10.** Caulking compound spout **11.** Wax can cap **12.** Air conditioner knob **13.** One-service jelly holder **14.** Posture chair knob **15.** Lotion cap **16.** Salt sifter closure **17.** Detergent can cap **18.** Toothpaste cap **19.** Captive spout and cap **20.** Oilcan spout **21.** Cocktail bitters cap

CANCO Division AMERICAN CAN COMPANY NEW YORK CHICAGO NEW ORLEANS SAN FRANCISCO



All new metal cap for a brand-new product

When packaging was selected for this brand-new cleaning product, the manufacturer topped it off with Armstrong's newly designed metal cap. Why? Because this cap offers a tightly rolled, kink-free bead . . . a deep, smooth thread that seats firmly without cocking . . . a fine knurl and smooth, gentle fade-out. This new cap is the result of two years of planning, research, and retooling. Ideal for high-speed lines, it's a good choice for your next package. Armstrong Cork Co., Lancaster, Pa.

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in new folding cartons of

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Tests have proved that aluminum foil as the exterior material of ice cream packaging *maintains product quality best* because it holds the required low temperature in the vulnerable top layers of storage cabinets. Aluminum does this by (1) reflecting radiant heat away from the product, and (2) rapidly conducting top-layer heat down to the lower levels where the refrigerating process absorbs it. Reynolds folding cartons are the modern way to provide this aluminum foil exterior in economical one-piece form... rigid, strong, highly moisture-resistant, and with the extra merchandising advantage of brilliant eye-appeal.

Your product may be able to benefit by Reynolds complete carton operation which includes laminating, color-gravure printing, cutting and creasing to carton gluing. Or, you may find the answer to your package requirements in a Reynolds overwrap, boilable pouch, label, container or carton liner. They all demonstrate the *New Economics* of Reynolds Wrap Aluminum Packaging ... its low relative cost compared to other marketing factors, the high return on your investment. For full information, including data from an interesting consumer study: "The Image of Aluminum Foil," call any Reynolds sales office. Or write to **Reynolds Metals Company,** Richmond 18, Virginia.

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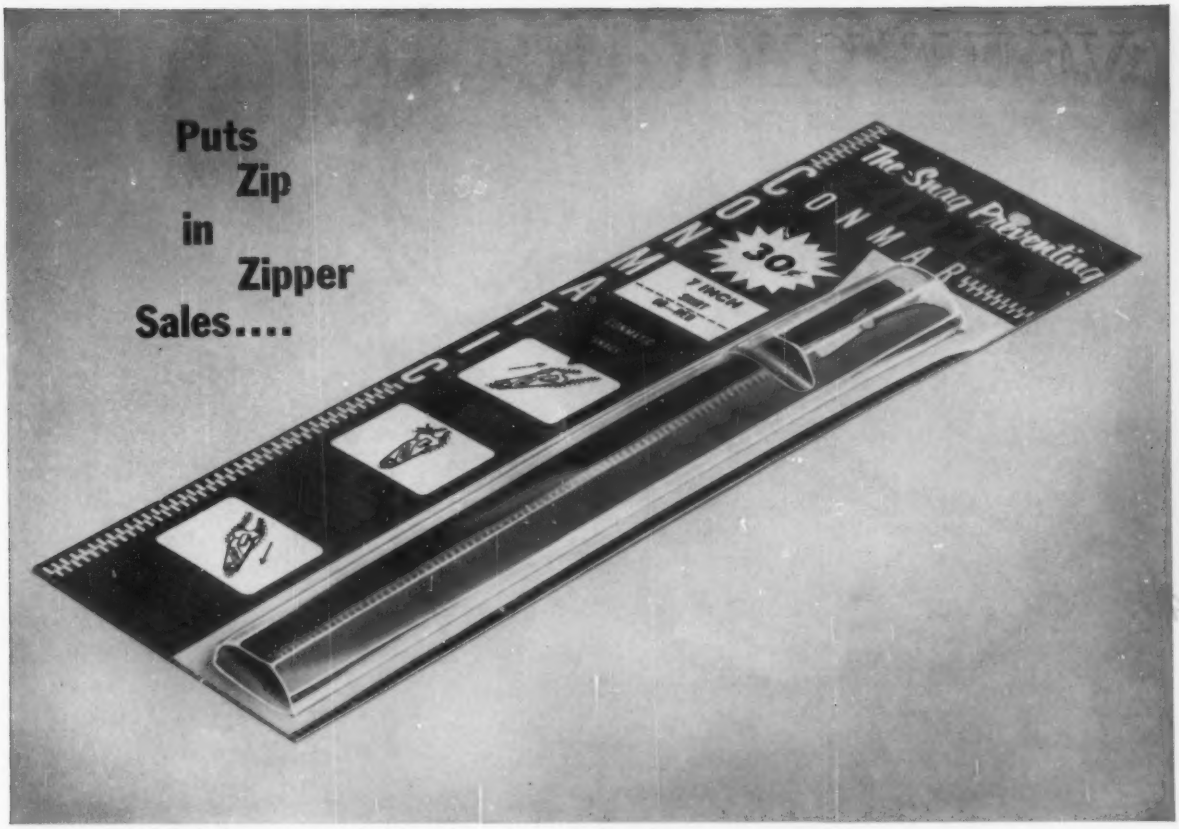
BEGINNING OCTOBER! See Reynolds shows—James Michener's "ADVENTURES IN PARADISE" Monday nights and "ALL STAR GOLF" every Saturday ABC-TV Network.

Designed by Cawley-Neff Associates, Inc., this colorful carton carries the Seal of REYNOLDS WRAP ALUMINUM PACKAGING.



Acetate Sheeting

by **JOSEPH DAVIS PLASTICS CO.** is both a protective covering and a sales aid for these Conmar CONMATIC Snag-Preventing Zippers. **Clear-Vu Packaging Corp.,** New York City, has vacuum formed the acetate blister, assembled the materials and packaged the entire item using crystal clear JODA acetate, to provide superb product visibility and unusually fine protection against shelf, storage and shipping wear. And, of course, the brilliant clarity of JODA acetate means increased sales, for products that are seen better, sell better.

JODA extruded acetate sheets, rolls and film in all gauges — transparent, translucent or opaque — are excellent for vacuum forming. Why not investigate the advantages of JODA acetate and see for yourself how it can help solve your packaging problems.

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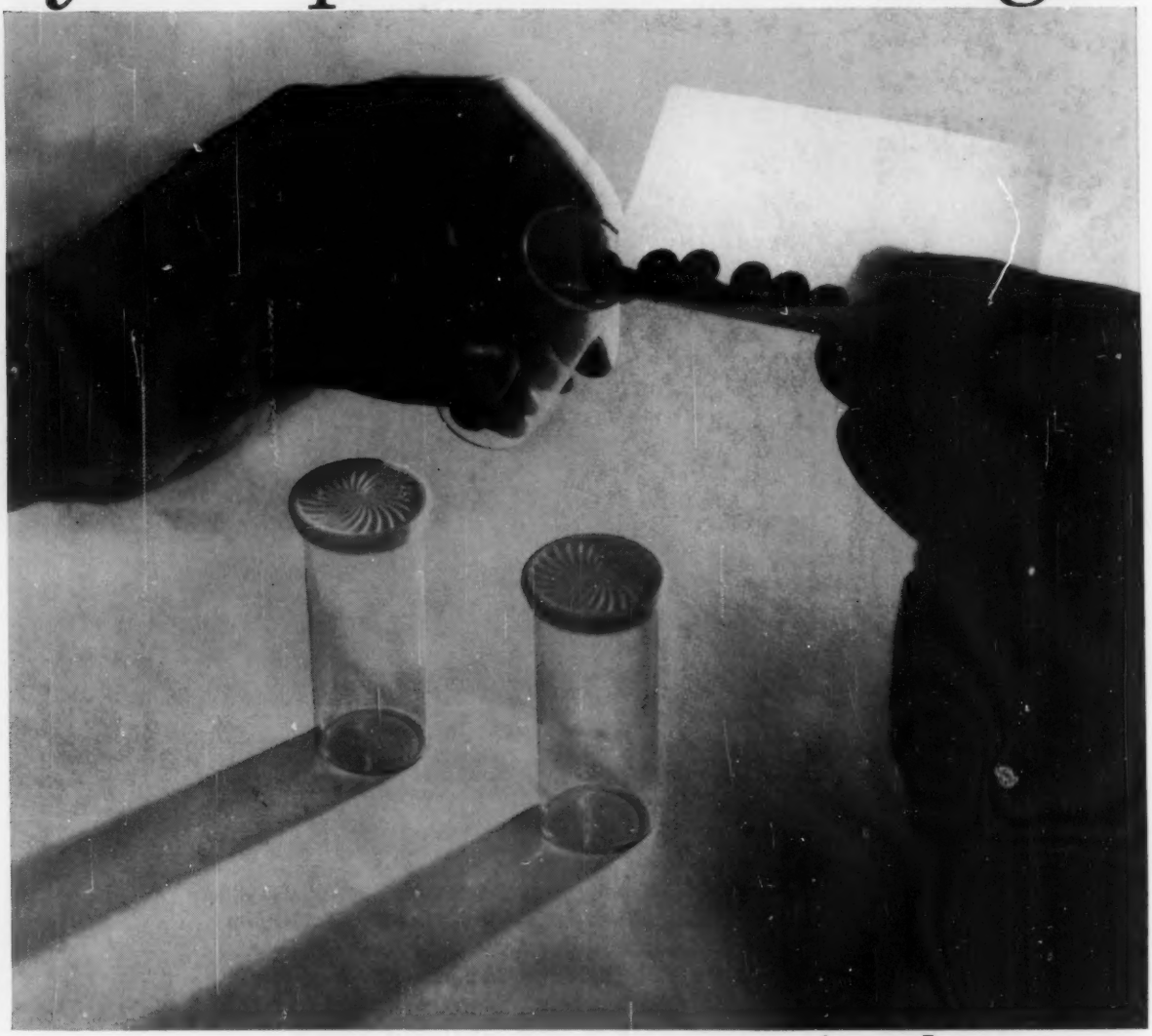
your product belongs



in glass by Brockway

Is your product one of the many effective remedies that are accepted by the public? And is the container accepted as one that will adequately protect its important ingredients? • No other container will provide quick acceptance and positive protection for your preparation like a quality glass container by Brockway . . . protection that is *guaranteed* through effective quality control and rigid inspection in the manufacture of these fine containers. • A product that is worthy of consumer acceptance deserves a quality glass container by Brockway.

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COMPANY, INC., Brockway, Pennsylvania
Sales Offices in Principal Cities

Cellu-Craft prints the wrap...

that wraps the mints...

that mint the profits for SCHRAFFT'S®

Cellu-Craft's creative designing and brilliant flexographic printing on foil matches the high quality and refreshing goodness of Schrafft's delightful mints. This combination has helped America's foremost confectioner boost volume and mint more profits.

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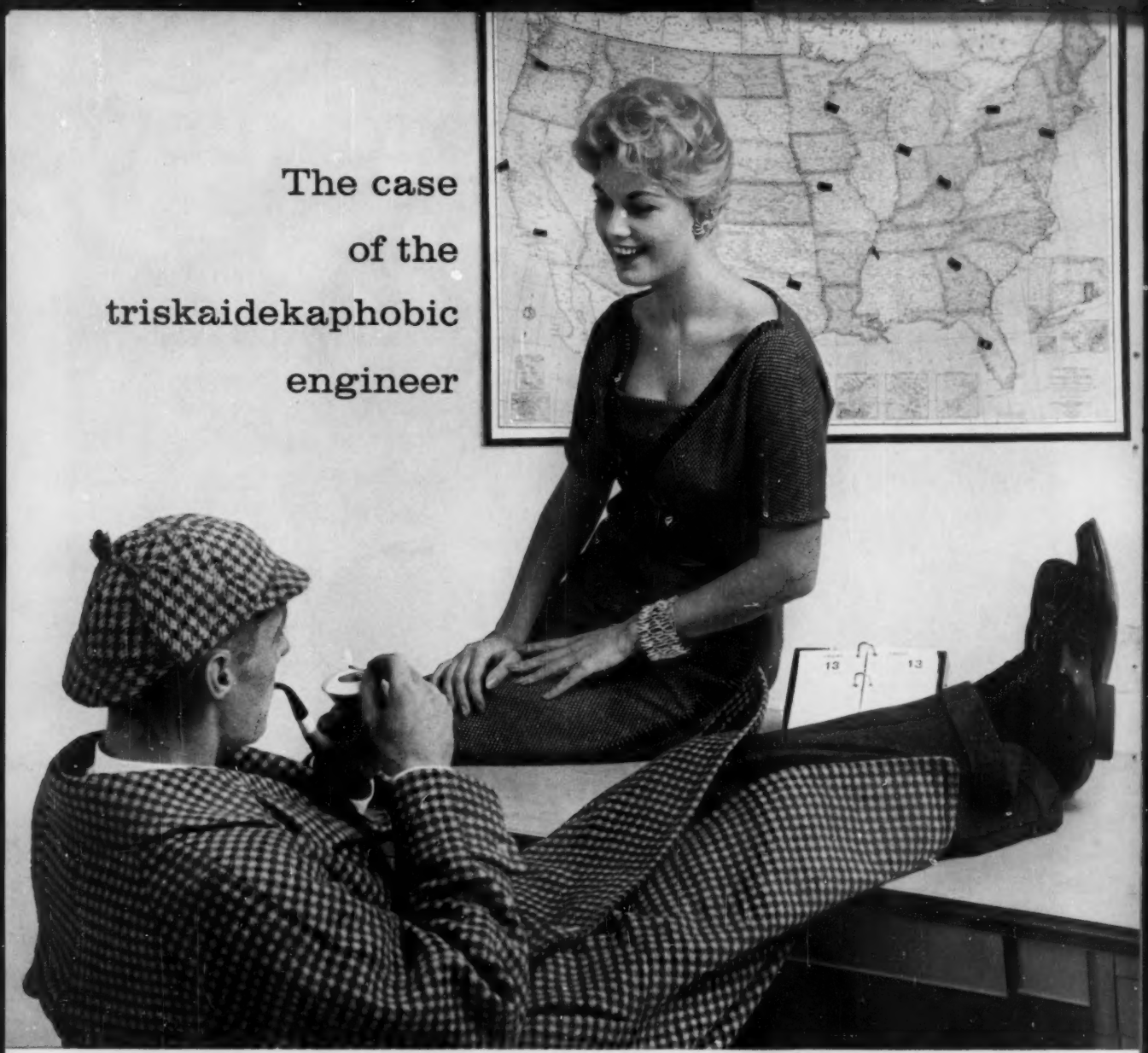
The case of the triskaidekaphobic engineer



FEARLESS FULLER: I finished off a very interesting case over the weekend, Miss Watson.

MISS WATSON: Let's hear about it, Fearless.

FEARLESS FULLER: It concerns a good prospect who agreed our adhesives were best, our service was best and our price was best. Yet he wouldn't order.

MISS WATSON: A baffling mystery.

FEARLESS FULLER: Yes, until I discovered the reason for his actions. The man suffers from triskaidekaphobia.

MISS WATSON: Sounds like a horrible disease.

FEARLESS FULLER: Not in the least. Actually all it means is fear of the number 13. Many people are triskaidekaphobics.

MISS WATSON: That must be what my hillbilly cousin was. He refused to sleep 13 in a bed. But what has triskaidekaphobia got to do with us?

FEARLESS FULLER: Well, this engineer's been reading our ads and noted that we always list 13 Fuller Plants. And for this reason he refused to order from us.

MISS WATSON: How did you solve the case?

FEARLESS FULLER: I explained that although we list 13 plants, these are only our main plants. Actually, Fuller has additional locations, 23 to be exact.

MISS WATSON: Well, did you sign him up for a big order?

FEARLESS FULLER: Naturally.

MISS WATSON: Oh, you're wonderful, Fearless!

FEARLESS FULLER: Elementary, Miss Watson. There are very few problems a Fuller man can't solve.

Your Fuller man is ready with the correct solutions on any adhesive problems for you, too. Contact your nearby plant.

H.B. Fuller Co.

255 Eagle Street, St. Paul 2, Minn.

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THERE'S INSPIRATION
for Distinguished Cartons in
No. 90 ULTRAGLOSS

The Incomparable Gloss and Beauty of This Glazed Finish Boxboard Provide Dramatic Carton Design Settings

GLOSS—the highest you've ever seen—sets this boxboard apart from any others! Not even expensive foil types convey so great an impression of elegance and rare quality. A limited production boxboard, No. 90 Ultragloss gives fresh challenge and opportunity to package designers . . . assures excellent production qualities to box makers . . . opens wider sales horizons for product manufacturers. It is made in a wide range of weights, and in modern pastel color tints as well as dazzling white. Samples are free for the asking, and are well worth asking for!

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RIDGEFIELD, NEW JERSEY

REPRESENTATIVES / Detroit—Joseph P. Giroux / Los Angeles—Norman A. Buist / Philadelphia—Philip Rudolph & Son, Inc. / St. Louis—A. E. Kellogg

Are You Completing All These Jobs in One Operation?

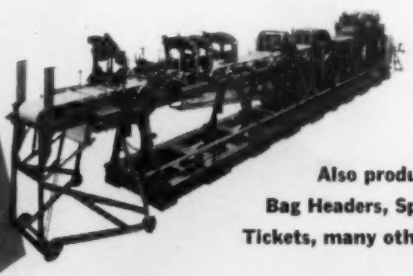
Just one operation completes any kind of tag—merchandise, shipping, manifold—with any kind of tag material right up to .050 board—when you use one New Era Press operated by just one pressman.
Most Profitable Way to Produce
TAGS
LABELS
FORMS
Produced at Lowest Costs
You can complete in one operation any type of label, using any type of label stock including heat seal, pressure sensitive and other materials—with one New Era Press at speeds up to 7,500 impressions per hour. Finished product is delivered either cut off, rewound or folded.
Completed in Any Size
Why pass up or farm out short-run orders of 5,000 to 30,000 sets for any size snap-outs and continuous forms when one New Era Press does the jobs profitably with minimum changeover and downtime. There is no limit to size of forms as with a rotary press.
NEW ERA WEB PRESS
GRAEBER WHIRLWIND 185

FROM PAPER ROLL TO COMPLETED PRODUCT IN ONE HIGH-SPEED OPERATION

That's the New Era Press! It prints any number of colors on one or both sides of the web at the same time, die-cuts any shape or size, slits, punches, perforates, numbers and delivers the finished job—either cut off, rewound or folded—at the end of one run by one pressman. The New Era Bulletin also shows how the New Era Press handles bag headers, tickets, specialties. Write on your company letterhead now for your free copy of the New Era Bulletin.

SEE GRAPHIC ARTS IN ACTION
7th EDUCATIONAL
Graphic Arts
EXPOSITION
NEW YORK COLISEUM SEPT. 8-12 1947
NEW ERA BOOTH NO. 147

NEW ERA



Also produces
Bag Headers, Specialties,
Tickets, many other products

MANUFACTURING CO., BOX #400, Dept. MP-9, Hawthorne, N.J.
Manufacturer of the finest printing presses for more than 59 years

THESE FIRMS

Do Better with Doughboy

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Mrs. Smith's Pretzel Co.
Easton, Pa.

J. P. Fritz Wholesale Co.
Newport, Minnesota

Bradley Candy Co.
Nashville, Tenn.

Dayton Nut Products Co.
Cincinnati, Ohio

Big-Tex Distributing Co.
Dallas, Texas

Fresno Macaroni Co.
Fresno, California

Burry Biscuit Co.
Elizabeth, New Jersey

General Candy Co.
Chicago 39, Illinois

Welch Nut & Candy Co.
Chicago, Illinois

Anderson Candies, Inc.
Wilmington, N. C.

King's Bakery, Inc.
Colledgedale, Tenn.

Seyfert Foods Co., Inc.
Fort Wayne, Indiana

C & C Distributors
Sharon, Pa.

Kimbell Candy Co.
Chicago, Illinois

Dorothy Flicek Industries
Chicago, Illinois

Boston Sausage & Provision Co.
Boston, Mass.

D. F. Stauffer Biscuit Co.
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Reed & Prince Mfg. Co.
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More Candy Co.
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Berwyn, Ill.

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Providence, Rhode Island

The Fleming Co., Inc.
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Peanut Products Co.
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Walter Johnson Cookie Co.
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Flavour Candy Co.
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Barnard Nut Co.
Miami, Florida

H. H. Evon Co.
Chicago, Illinois

Mamma's Cookies Bakeries
Cicero, Illinois

Whites Food Products Co.
Oakland, California

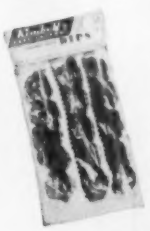
Pack twice as fast with

Doughboy

JAW SEALER-LABELERS

MODEL PJS

The new Doughboy Jaw Sealer-Labeler will do the work of two and sometimes three ordinary labeling machines. As soon as the bag touches the vacuum (air) control, the machine takes over and leaves operator's hands free to reach for the next bag. It automatically labels, seals, and if desired, codes and punches the package. The automatic cycle cuts operator motions, increases production speed and assures better packaging. Pneumatic pick-up assures *positive* single label delivery from label box to sealing jaws. Label clamp holding bar assures *positive* positioning of label at sealing jaw. Adjustable folding bar assures *positive* label folding.



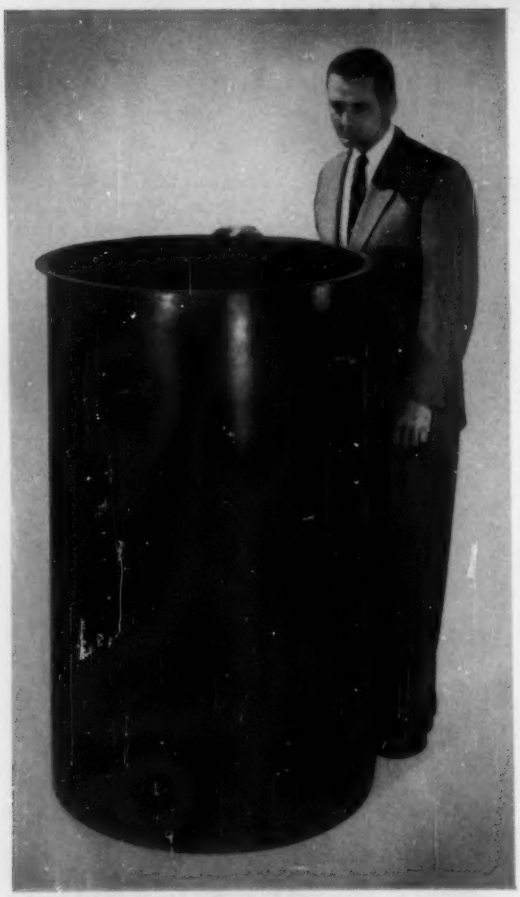
CODER AND HOLE PUNCH OPTIONAL

Coder and Hole punch are optional. An embossed code is precision made from metal type which is easily placed in accessible holder at the front of the sealing jaw. The punch, made of high carbon steel, punches a clean edged, round hole exactly centered in label.

Doughboy INDUSTRIES, INC.

MECHANICAL DIVISION
NEW RICHMOND, WISCONSIN, U.S.A.

VEGETABLE SEEDS in transparent pouches of cellophane coated with ALATHON 16 promote inspection by self-service customers . . . have increased sales substantially. Pouches are attractively displayed in racks or hung on hooks . . . protect freshness of 216 varieties of seed. (Coating by Flexible Packaging Div., Continental Can Co., Mt. Vernon, Ohio, for Alexandria Seed Co., Inc., Alexandria, La.)



CYLINDRICAL POLYETHYLENE TANK has capacity of 160 gallons. Molded in one piece without joints or welds, it may be used both indoors and out. Fittings can be placed at any desired location. (Tank molded in black, natural and a variety of colors by Delaware Barrel & Drum Co., Inc., Wilmington, Delaware.)

For a low-cost, specify

PACKAGING HOSIERY in durable film of ALATHON 23A lowers initial package cost and reduces number of returns due to package damage. Customers like complete protection afforded by lasting heat seals of ALATHON, plus hand and excellent gloss of package. (Package by Texas Plastics, Elsa, Texas, for Comal Hosiery Mills, New Braunfels, Texas.)

RETAINING RINGS for corks or stoppers made from extrusions of ALATHON 20 are unaffected by bottle contents. They have outstanding resistance to stress cracking, excellent non-adhesive qualities, resilience and aging properties. Liners, seals, gaskets and washers may also be extruded from ALATHON 20. (Mfd. by Contour Extrusion Co., Mamaroneck, N. Y., for Schenley Industries, Inc., N. Y., N. Y.)

TOBACCO POUCH derives excellent moisture-vapor barrier from inner coating of Du Pont ALATHON 16 polyethylene resin. Coating will not crack, even at folds . . . prohibits drying, keeps mixture fresh and flavorful longer. Odorless and tasteless, ALATHON will not affect tobacco. (Pouch coated and converted by Milprint, Incorporated, Milwaukee, Wisconsin, for Philip Morris, New York.)

sales-appealing package a Du Pont ALATHON® polyethylene resin

Since packaging plays such an important role in the impression your product creates, it pays to begin with the finest packaging material of its kind . . . Du Pont ALATHON polyethylene resin.

Du Pont has developed an entire family of ALATHON polyethylene resins, each one with a particular property or combination of properties which make it outstanding for a specific application. Thus there is an ALATHON tailored expressly for your packaging needs.

For additional information in selecting the right ALATHON for your needs or for future issues of DuPont's quarterly publication PACKAGING TRENDS, fill in and mail the coupon below.

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. . . THROUGH CHEMISTRY

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"Comparison has proved it!"

VERDICT

THE WORLD SUPER C.M. HAS NO EQUAL!

Prospective customers of glass labeling machinery are like prospective customers everywhere . . . they want to be sure they're right even *after* they buy. Recently several owners of the versatile Super C.M. labeler have been approached by competitive machinery manufacturers who offered to put in their equipment on a "trial" basis.

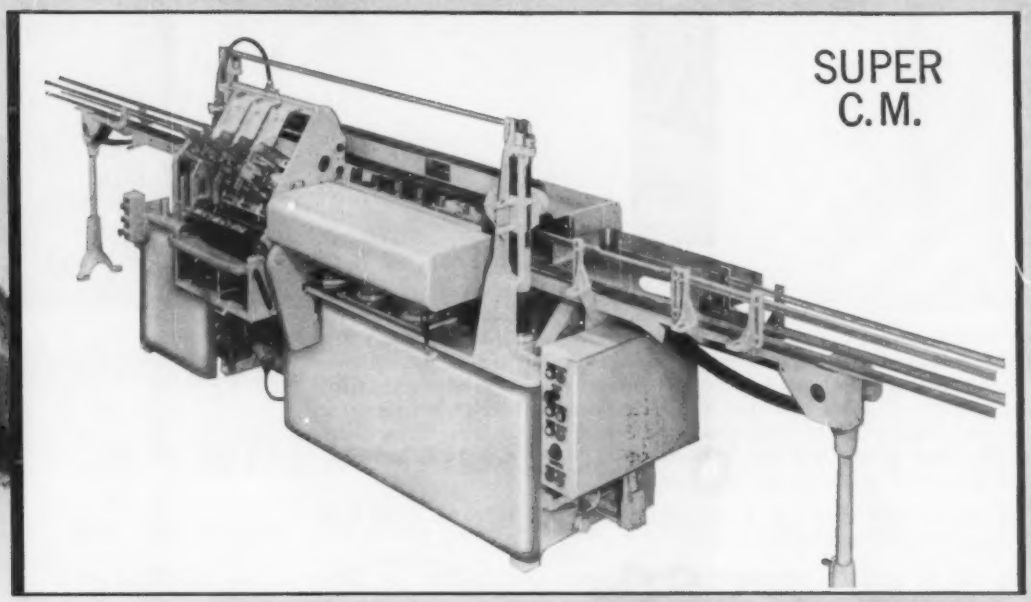
"Why not?" they agreed . . .

Result? . . . hands down proof that the WORLD Super C.M. is by far the most versatile high speed labeler ever used!

In test after test it outperformed each and every competitive machine. The Super C.M. was so superior in operating efficiency against any competitive machine, that there was no real basis for comparison. Proof . . . that performance is the only true measure of machine worth.

There is a substantial price differential between the Super C.M. and the competitive labeling equipment offered in these trials, but an operating efficiency of better than 10-15%, more than offsets this investment.

We will be glad to show you factual proof of Super C.M. performance. Better still . . . let us tell you what this unit can do for your packaging line.



Good Labeling *Sells!*

WORLD LABELERS

ECONOMIC MACHINERY COMPANY • WORCESTER 3, MASS. / Division of Geo. J. Meyer Manufacturing Company

World's Largest Manufacturer of High-Speed Labeling Machinery

M&Q Nylon Film knows its onions... its grease...
its foods... its moth repellents...
YOU ARE CORDIALLY INVITED TO CALL FOR A FREE SAMPLE
its temperatures... its social position

This M & Q Nylon Film containing a number of unrelated items in heat-sealed compartments demonstrates why this particular film material made of high tensile strength Plaskon* Nylon may be your answer for the packaging of difficult products. Its advantages: 1. Low permeability —containment of odors as strong as a sliced onion. 2. High resistance to grease and vapors—as in crank case grease and moth flakes. 3. Excellent heat resistance—whole bag can be steam-sterilized. 4. Good printability—the advantage of print on the film itself.

To obtain a sample of M & Q Nylon Film with products sealed in for your own close examination, write or call:

M&Q PLASTIC PRODUCTS

FREEHOLD, NEW JERSEY, FReehold 8-6663

**Trade Mark of Allied Chemical Corp.*

metromatic...

when you need it!

Storks have a great sense of timing – and so does Metro. Whether your product is liquor, or any other, you'll find Metro glass containers a cause for celebration. From design to delivery, specialists geared to jet-age efficiency, concentrate their energies in providing the proper container for your product. Fine firms find it a good experience to rely on Metro experience. For old-fashioned family service with new fashioned efficiency–it's ***metromatic*** for you!

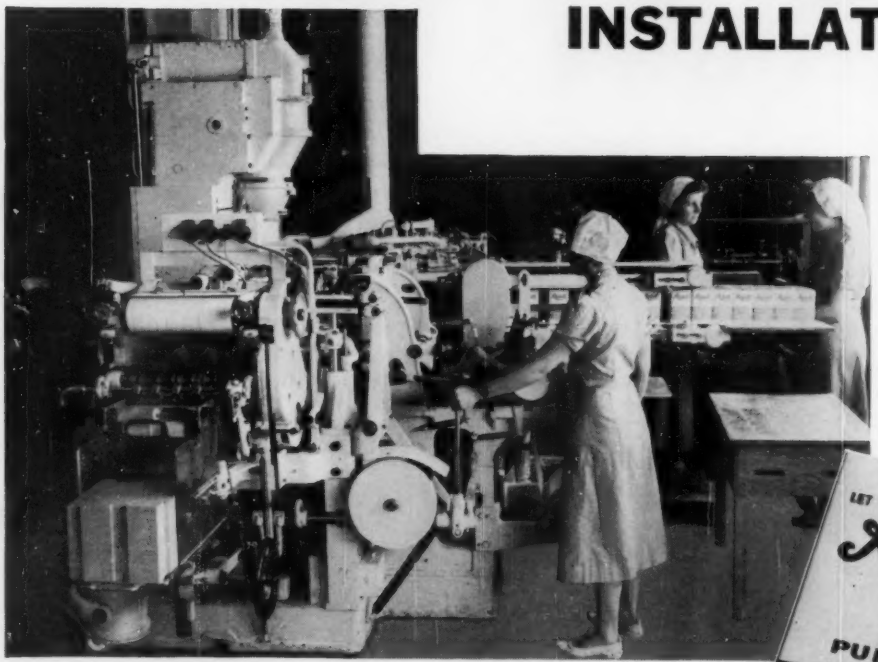
MANUFACTURERS OF QUALITY GLASS CONTAINERS

METRO GLASS

Metro Glass Company, Incorporated,
General offices: Jersey City, N. J.

HESSER congratulates Canada Dominion Sugar Co. Ltd. on their new Toronto Refinery

Redpath ICING SUGAR AUTOMATICALLY PACKAGED BY HESSER'S LATEST CANADIAN INSTALLATION!



Pictured at left is the Hesser PDHJ III machine packaging one pound Redpath Icing Sugar. Being fully automatic, it makes the double package, fills and closes automatically.

(Note the multiple discharge saving floor space)

POINTS ABOUT HESSER MACHINES

- Well known companies on all continents consistently choose **HESSER** machines.
- Every square foot represents money— **HESSER** machines are designed to occupy the smallest possible floor space.
- The basic principles of quiet operation have been developed in **HESSER** machinery over the last two decades.
- Design is based on easy maintenance from cam to final movement.
- The **HESSER** machine is entirely manufactured by **HESSER** including weighing or filling mechanisms. Purchaser deals with only one supplier for all equipment needs including packaging machines, printing machinery, bundling or filling units.

Please contact:

Packaging Equipment Service Ltd., Willowdale/Ont.
Geveke & Co., Inc., New York 4, N. Y.
Diederichs & Griffin Co. Chicago 48/Ill.
Ed. A. Wagner & Co., Dallas/Texas
James C. Hale & Co., San Francisco/Calif.
Agencia ANAHUAC, Hugo Schoener, Mexico D. F.

FR.HESSER MASCHINENFABRIK-AKTIENGESELLSCHAFT · STUTTGART-BAD CANNSTATT

NEW DESIGNS IN MARLEX

New PLAX bottle for Breck Children Shampoo is made of rigid, unbreakable MARLEX*

New Breck Children Shampoo is made especially for the fine, delicate hair of children . . . does not sting the eyes, according to the Breck Research and Development Laboratories.

For its new Children Shampoo, John H. Breck, Inc. wanted a new package that was attractive, lightweight, unbreakable, compatible with the product and suitable for machine filling. So working with PLAX Corporation, Hartford, Conn., they designed a beautiful, unbreakable bottle, blow-molded from MARLEX rigid polyethylene that met every specification required.

By using MARLEX 5000 Series resin, tailor-made for detergents, PLAX obtains maximum strength, rigidity and resistance to stress-cracking, with minimum weight and wall thickness. Lightweight containers made of MARLEX also save Breck thousands of dollars on shipping costs and breakage losses!

No other type of material serves so well and so economically in so many different applications. How can MARLEX serve you?

*MARLEX is a trademark for Phillips family of olefin polymers.

PHILLIPS CHEMICAL COMPANY, Bartlesville, Oklahoma

A subsidiary of Phillips Petroleum Company

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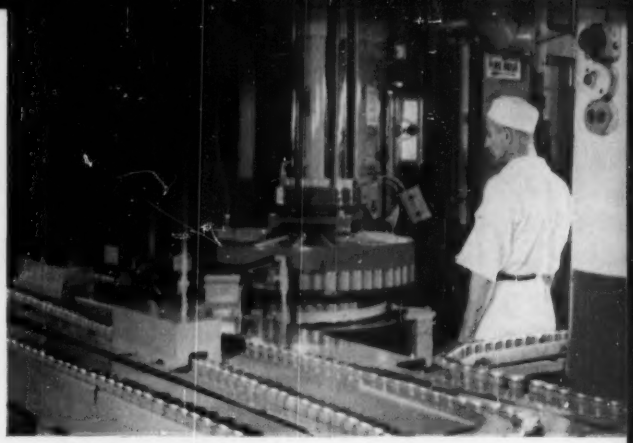
East Providence 14, R. I.	New York 5, N. Y.	Akron 8, Ohio	Elmhurst, Ill.	Pasadena, Calif.	Dallas 25, Texas	New York 5, N. Y.
GEnova 4-7600	Digby 4-3480	FRanklin 6-4126	TErrace 4-6600	MUrray 1-6997	EMerson 8-1358	Digby 4-3480

MARLEX®

This **Trade-Mark**



on **billions** of **glass containers**

is backed by **O-I resources** for **research, engineering** and **development**

Today's Duraglas® Containers...with the O-I trademark on the bottom . . . are the finest you can buy to protect your quality products.

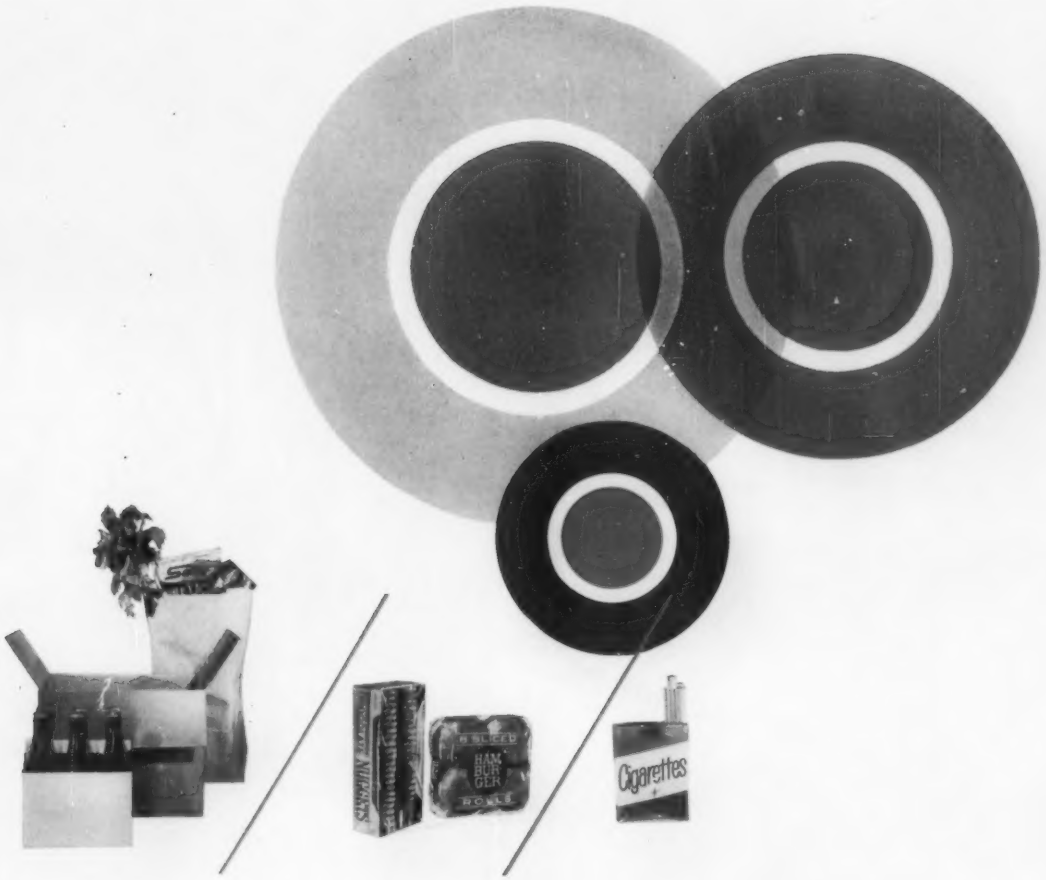
This unmatched quality is the result of Owens-Illinois research and development carried out today by scientists and glass specialists at the Owens-Illinois Technical Center. Here the goal is to make Duraglas Containers still better by developing better glass, better glassmaking methods and by manufacturing on a test basis before the new developments can be employed by one or more of O-I's manufacturing plants.

The O-I Trade-Mark signifies the quality, research, engineering and design which stand behind every glass package manufactured by Owens-Illinois.

For the finest glass packaging . . . the right containers, plastic or metal closures, label designs, cartons—plain or imprinted with your sales message . . . see Owens-Illinois or call our nearest office today.

DURAGLAS CONTAINERS
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO



A Packaging Decision Can Change the Course of a Business

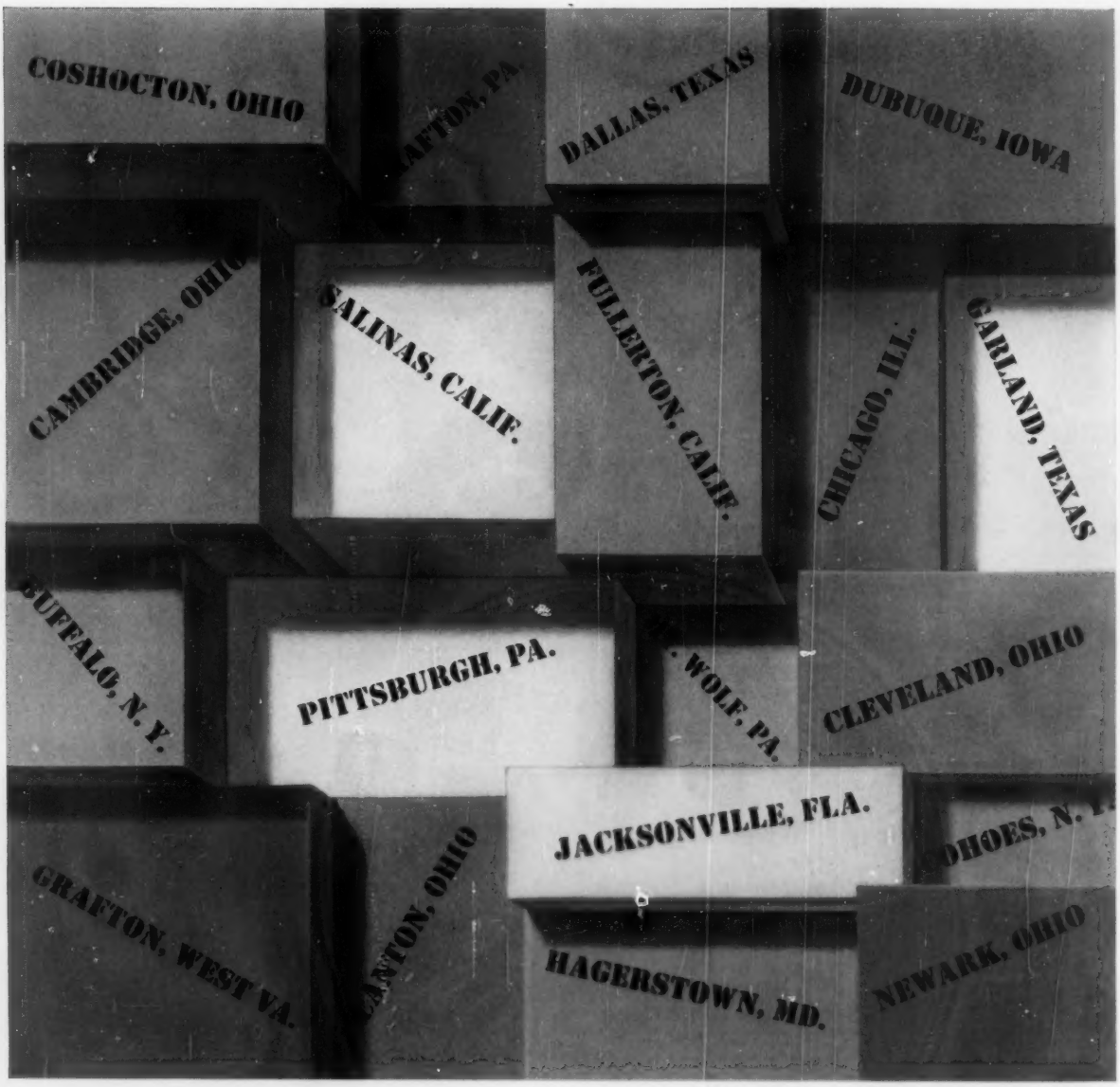
With a new package—you can bring a dying business back to life . . . or give a healthy business an added force.

If you're considering a new package, look to Olin Mathieson's Packaging Division. Whether it's a package for shipping or a package for selling, we can provide you with ideas which can help cut costs or increase sales. The Packaging Division manufactures Olin Cellophane and Olin Polyethylene, Frostkraft paper and paperboard, corrugated shipping containers, multi-wall sacks, grocery bags and folding cartons. Also Ecusta cigarette paper, light-weight printing and specialty papers. Call in an Olin Mathieson representative today.

Olin Frostkraft Ecusta

OLIN MATHIESON PACKAGING DIVISION

Olin Cellophane, N. Y. 21, N. Y. Frostkraft Products, West Monroe, La. Ecusta Papers, Pisgah Forest, N. C.



St. Regis boxes come from all over America!

It's easy to get the corrugated boxes you want . . . when you want them. That's because St. Regis operates box plants in 19 cities throughout America!

You gain many other advantages, too, when you buy St. Regis boxes. They give your product outstanding protection because they're engineered by experts . . . then made from the finest materials on the most modern equipment.

Result? A superior shipping container that gets your product to market—and helps market your product when it gets there.

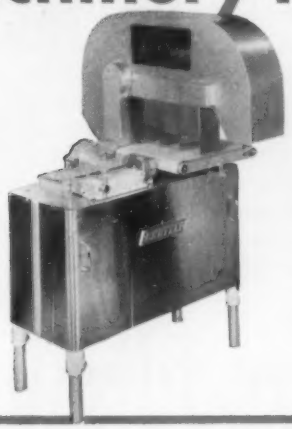
For more specific information, write St. Regis Paper Company, Dept. MP-559, 150 East 42nd Street, New York 17, N. Y.

CONTAINER DIVISION

St. Regis PAPER COMPANY

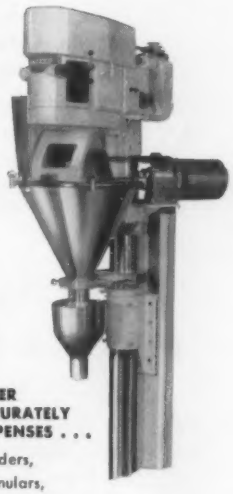
150 EAST 42ND STREET, NEW YORK 17, N. Y.

Machinery for Creative Packaging



CHECKWEIGHER . . .

Speeds to 200 pm
Accuracy to 1/64 ounce
Weights up to 2 lbs.
Continuous Motion
Electronic
Will handle most containers . . . open or closed.



FILLER ACCURATELY DISPENSES . . .

Powders,
Granulars,
Semi-liquids,
Liquids,
Pastes.

A PACKAGING PRODUCTION LINE . . .

Versatile Packager and Cartoner . . . integrated for efficient production. Automatically forms, fills, seals pouches . . . inserts one or more pouches per carton . . . broad range of package sizes and types.

BARTELT . . . performance proved

- **Quality Output** — Bartelt machines consistently provide quality production for many of America's favorite products.
- **Versatility** — Designed for fast change-overs as well as a wide range of package sizes and types; Bartelt versatility is unmatched.
- **Rugged Reliability** — Bartelt machinery has repeatedly been proven capable of meeting the highest production requirements.
- **Minimum Upkeep** — The simplicity, accessibility and ruggedness of Bartelt equipment assures minimum maintenance costs.
- **Custom Engineered** — Each Bartelt machine is designed to meet the customer's specific requirements.
- **Service** — from preliminary analysis of a packaging program, through the complete pre-delivery machine checkout, to the installation-instruction phase directed by experienced Service Instructors, our customers have found that with Bartelt . . . service is a concept.

Where Unfailing Quality Counts

BARTELT ENGINEERING COMPANY

1900 HARRISON AVE., ROCKFORD, ILLINOIS • NEW YORK OFFICE: 370 LEXINGTON AVE., N.Y.C.

Is Packaging Machinery Economical Enough?

Economy is a favorite subject of equipment buyers who are looking for ways to cut their costs. As a result, everybody talks economy because everybody wants economy. But how "economical" is economy supposed to be?

Obviously, your product has to look good to the consumer. Yet it must go into the package fast and with the least cost. The more time, labor and money it takes, the less you have left for profit.

With costs and competition going the way they are, economy has got to be a lot more "economical" than it used to be. Not only for products you're already packaging automatically, but for those you haven't even considered. Because automatic *packaging saves you money and improves your competitive position. That is, if it's economical* enough.

HOW *ECONOMICAL* DO YOU THINK PACKAGING MACHINERY SHOULD BE?

Take the example of a machine that automatically forms, fills, and seals bags—it can package anything from hardware to peas and beans. Your product may be entirely different, but look how much economy you must get from the packaging machine itself.

The machine should be simple in all ways. Without unnecessary complexity, it can do its work better and with less cost. And that savings in time, labor and care add to your profit.

You can really save
with the Triangle Bag Former, Filler and Sealer
—basic single-tube design . . . no involved adjustments . . . needs less operating attention and maintenance than normally expected.

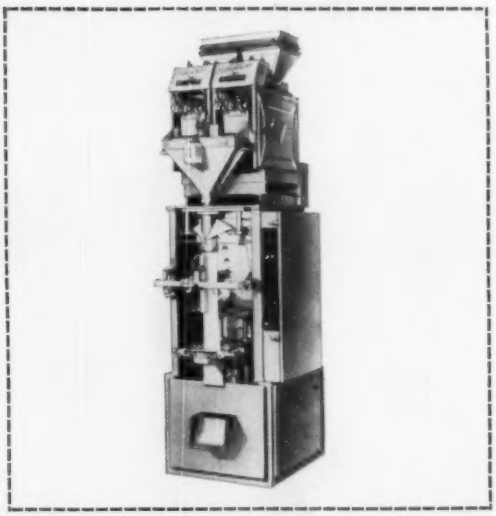
The machine should be fast. Because greater output per minute costs less per unit. And that lower cost gives you competitive advantage *and* more profit.

You can really save
with the Triangle Bag Former, Filler and Sealer
—55 bags per minute output—consistently . . . equal to complex twin-tube designs in many cases.

The machine should be versatile. Your line already includes more than one product in more than one package size. And, there are even more in the future. Bagging materials will change as well. But a new machine for each is not economical. Nor is costly downtime for machine change-over.

You can really save
with the Triangle Bag Former, Filler and Sealer
—handles all heat sealable materials . . . fast, simple change-over without delicate or involved adjustment.

How *more* economical could packaging machinery be? Simplicity of design, speed of operation and versatility for present and future needs—*these* are the efficiencies that the truly economical machine must have.



Regardless of what kind of product you're packaging, see Triangle when you are considering packaging equipment. We don't make equipment for *every* packaging need, but why take the chance of overlooking the real advantage our equipment offers you.

Write and describe your packaging needs. Let us send our full color 3-D slides and viewer of the equipment that will do your job (post paid both ways). No obligation, of course.

35 YEARS

•••••• YOU REALLY SAVE WITH ••••••

TRIANGLE
PACKAGE MACHINERY COMPANY

6634 W. Diversey • Chicago 35, Illinois
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Rowell boxes

keep fine products

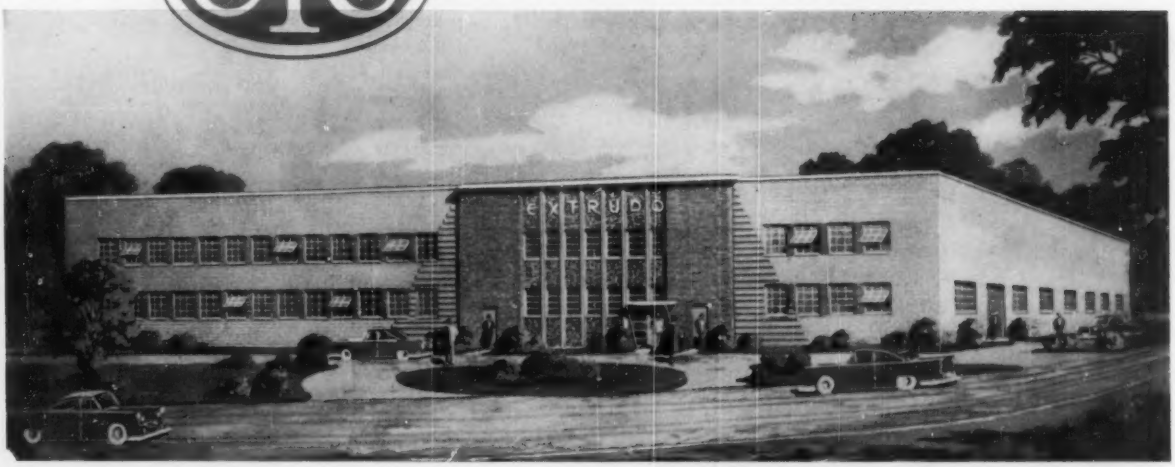
on the move!

Set-up boxes in a wide range,
made for Cosmetic & Drug Trade
throughout the United States.
Inquiries also invited from
box users in other lines

E. N. Rowell Co.
INC.
BATAVIA, NEW YORK

NEW SOURCE OF FLAT TREATED SHEETING BY

efc



Plant II, Pottsville, Pa.

The opening of this second plant has doubled our capacity to supply lay-flat tubing, and permits us to offer you flat treated sheeting of the unexcelled quality you expect of Extrudo-Film.

Write for descriptive brochure, samples and price list.

efc

EXTRUDO-FILM CORPORATION

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Long Island City 6, N. Y.
Pottsville, Pa. • Chicago, Ill.

Background for Packaging

Notes, quotes and comments. An editorial feature

Look for concerted action by the entire range of package-supplying industries, as urged by this magazine, to deal with problems of the new Federal Food Additives Amendment. Nearly 30 associations were represented at a recent exploratory meeting and other meetings will be held. The wide diversity of interests in this group, getting together on a single common problem, is believed unprecedented in the packaging field. Government officials are expected to give wholehearted cooperation.

Signs of leniency in F&DA enforcement of the Food Additives Amendment are beginning to appear. When wax-coating interests pointed out that it would be physically impossible to complete the required tests by next March, they were quietly assured that the deadline might be extended to March, 1961. *Note:* Law gives the Secretary of Health, Education & Welfare authority to grant a one-year extension. But F&DA says each case will be examined on its merits and extensions will be approved only where it is shown that every reasonable effort has been made.

Startling and significant to packagers are results of a survey by *Super Market Merchandising*. The average supermarket item sells only 10.7 units per week and returns a weekly profit of just 67.41 cents. Only 429 out of the 2,772 grocery items studied in 33 Youngstown, Ohio, markets turned in a gross profit of as much as $1 weekly. Close to 10% moved less than one package a week, while 42% sold between one and five packages a week. There's the reason why supermarkets resist new items unless convinced that they're packaged and promoted to move fast. With industry's average net profit only 1.5% on sales, it's clear why many operators are trying to cut labor costs by demanding manufacturer price marking. *(See "The Price-Marking Problem," p. 99, this issue.)*

New labeling law for hazardous substances won't reach a vote in present session of Congress, but will be held over till January. Senate started hearings in August (Interstate & Foreign Commerce Committee), but House hearings can't start till after adjournment. Prospects for enactment in next session are good. Two bills are pending in House, one in Senate. Minor differences in two House bills represent varying viewpoints of American Medical Assn. and Manufacturing Chemists Assn., but these are expected to be adjusted, resulting in a bill which packagers of hazardous chemicals and drugs will support.

Prompt action by the plastics and packaging industries to correct public misapprehensions in the "plastic-bag scare" appears to be effective Where legislation has been passed requiring warning labels on bags (as in New York City, New York State and California), it applies only to film less than 1 mil in thickness. The New York State law exempts bags in which the total of length and width is less than 25 in. The states of Florida, North Carolina and Illinois have dropped pending legislation in favor of educational programs.

Film industry develops perforation techniques to make even the ultra-thin polyethylene "dry-cleaner" film non-hazardous to infants. Du Pont's medical division has studied the volumetric breathing habits of infants and concluded that 1/32-in. perforations on 3/8-in. centers—almost imperceptible to the eye—would permit approximately 90% of normal air intake by a four-year old. Medical [*Continued on page 44*]

Groomed for Sales . . . . . .

Brylcreem, "World's Largest Selling Hair Dressing", now enjoys *outstanding* consumer-appeal in a new carton made of Brite-Pak Enamel Coat bleached board.

With Brite-Pak available, Harold F. Ritchie, Inc., makers of Brylcreem, switched to it for these sound selling reasons:

Snow white on both sides and all the way through, a Brite-Pak carton looks *more sanitary* than the old fashioned container with its uninviting, drab interior next to the product.

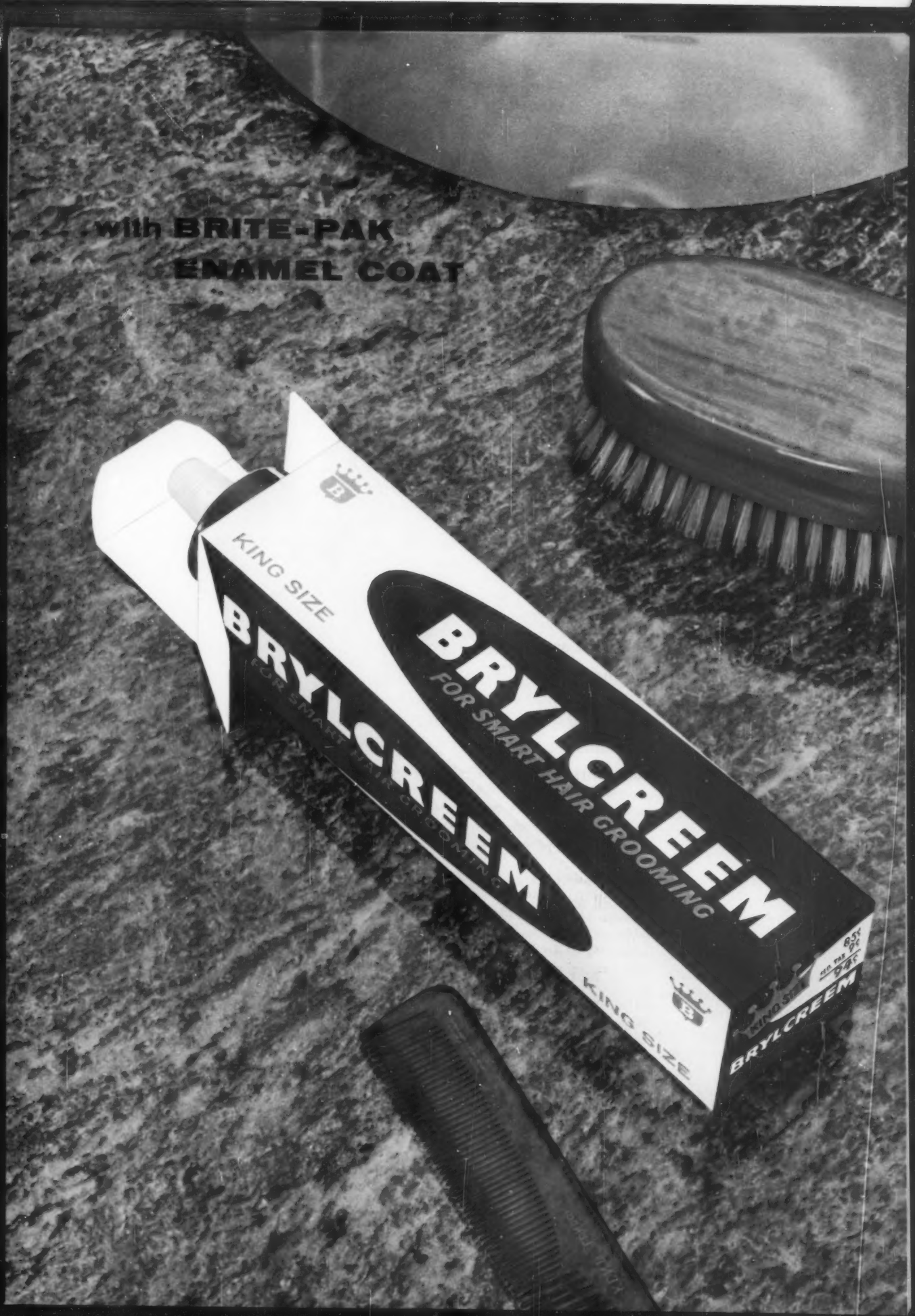
Brite-Pak is a *full time* salesman — first at the store and second in the home where its virgin-clean appearance invites *repurchase.*

Enamel Coat's gleaming surface is unsurpassed for brilliant full color process printing and sparkling product illustrations, yet this fine bleached board is truly *economical.*

Brite-Pak is the answer for the colorful, modern packages. See how you can upgrade *your* packaging with Brite-Pak . . . and still save money.

For full details, write to Bleached Board Division, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, N. Y.

West Virginia Pulp and Paper


with BRITE-PAK
ENAMEL COAT
KING SIZE
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FOR SMART HAIR GROOMING
BRYLCREEM
KING SIZE

literature indicates 20% of normal breathing is adequate for survival for an extended period. Where two or more layers of film are superimposed, embossing of film surface can prevent blocking off of air holes.

Comforting news for packagers, who may wonder if the economy is absorbing all the increased volume they are turning out this year, is this word from the Department of Commerce: The book value of all manufacturing and trade inventories is holding at about the same level as a year ago. Retailers' and wholesalers' stocks are up less than 1% from 1958.

The value of a packaging idea is recognized by the *Harvard Business School*. The success story of Ban, Bristol-Myers' top-selling roll-on anti-perspirant, will serve next year as one of the significant case histories upon which Harvard bases its marketing studies. Although the principle of Ban's ball-tip applicator package made it a success almost overnight, it was no sudden discovery, but the result of six years of study and market preparation. Roll-on principle is now spreading to other products.

Background for Packaging

Textile labeling must be carefully reviewed in light of the new Federal Textile Fiber Products Identification Act. Effective March 3, 1960, it requires precise labeling to indicate fibre content on all products containing 5% or more of cotton, silk or man-made fibres. Regulations which will be enforced, including acceptable generic terms for fibres, are spelled out in 45 rules issued by the *Federal Trade Commission*. Write for "Rules and Regulations Under the Textile Fiber Products Identification Act" to the Federal Trade Commission, Washington, D. C.

[*Continued from page 41*]

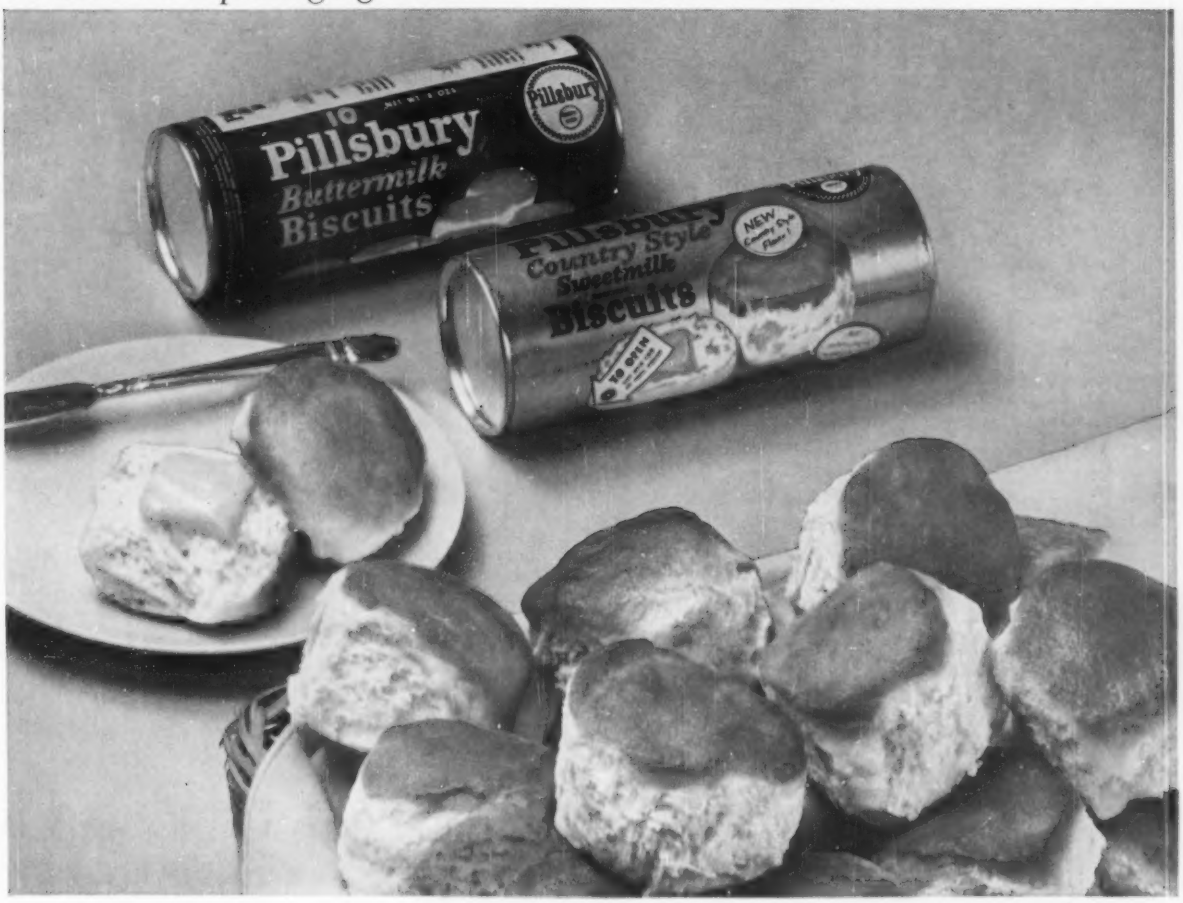
Price-cut stimulus may pay off for can industry. Second-quarter sales show definite improvement and predictions are now made that shipments will hit a new peak for the year, 3 to 4% more than in 1958. Metal containers for lard, meat, coffee and citrus juices are in particularly strong demand. Non-food cans are expected to show sharp gains, with larger shipments going to brewers. Makers are hopeful that soft-drink cans will reach a status rivaling that of the beer can. Aerosol cans are in a rapid growth phase.

No general move toward lower prices for converted film products is apparent as yet. Dobeckmun recently cut prices on some of its plastic packaging materials by as much as 10%, including stock bags and custom-printed and plain bags used for clothing, sheets and other retail products. Competitors generally were waiting to see the effect.

Eye opener for a group of European packagers making a study-tour of U. S. was session with *American Rack Merchandisers Institute* in Chicago. They were told flatly that European goods will have no chance in the non-food racks here until they are packaged according to American self-selling principles. Imported items that would otherwise be attractive have been rejected by rack merchandisers because of poor or no packaging. The visitors took copious notes on the rack-men's requirements and were particularly impressed by blister and skin packs, which are little known in Europe.

Note the trend to diversification of product among companies that have big investments in packaging facilities. *Shulton, Inc.*, which has one of the most highly developed aerosol filling operations in the country for its cosmetic products, has taken over the Bridgeport Brass line of aerosol insecticides while retaining the Bridgeport brand name. *(See "New Rotary Principle for Aerosols," p. 104, this issue.)* Shulton makes many of its own packaging supplies; has a plastics molding plant and a set-up box plant. The process which it developed for irradiating polyethylene was recently sold to Plax Corp.

Another FOIL packaging success with ANACONDA ALUMINUM . . .



ANACONDA ALUMINUM FOIL
helps Pillsbury Biscuits rise to the occasion

R. C. Can Company of St. Louis can take a bow for designing and producing this functional, easy-to-open, hard-selling foil package for Pillsbury refrigerated biscuits. A thin layer of Anaconda Aluminum foil on the inside of the can keeps moisture and leavening pressure in the dough and seals in Pillsbury goodness.

Bright outer labels of aluminum foil, produced by **Western-Waxide Division, Crown Zellerbach,** St. Louis; **Rap-In-Wax Paper Company,** Minneapolis and others, tell of the goodness inside the package.

Anaconda Aluminum foil that helps insure this packaging success, plus the know-how of our foil specialists are readily available to you—write Dept. ML-9, Anaconda Aluminum Company, General Offices, Louisville 1, Kentucky.

When you buy foil for packaging or printing, remember . . . every industry has one member who specializes in customer satisfaction.

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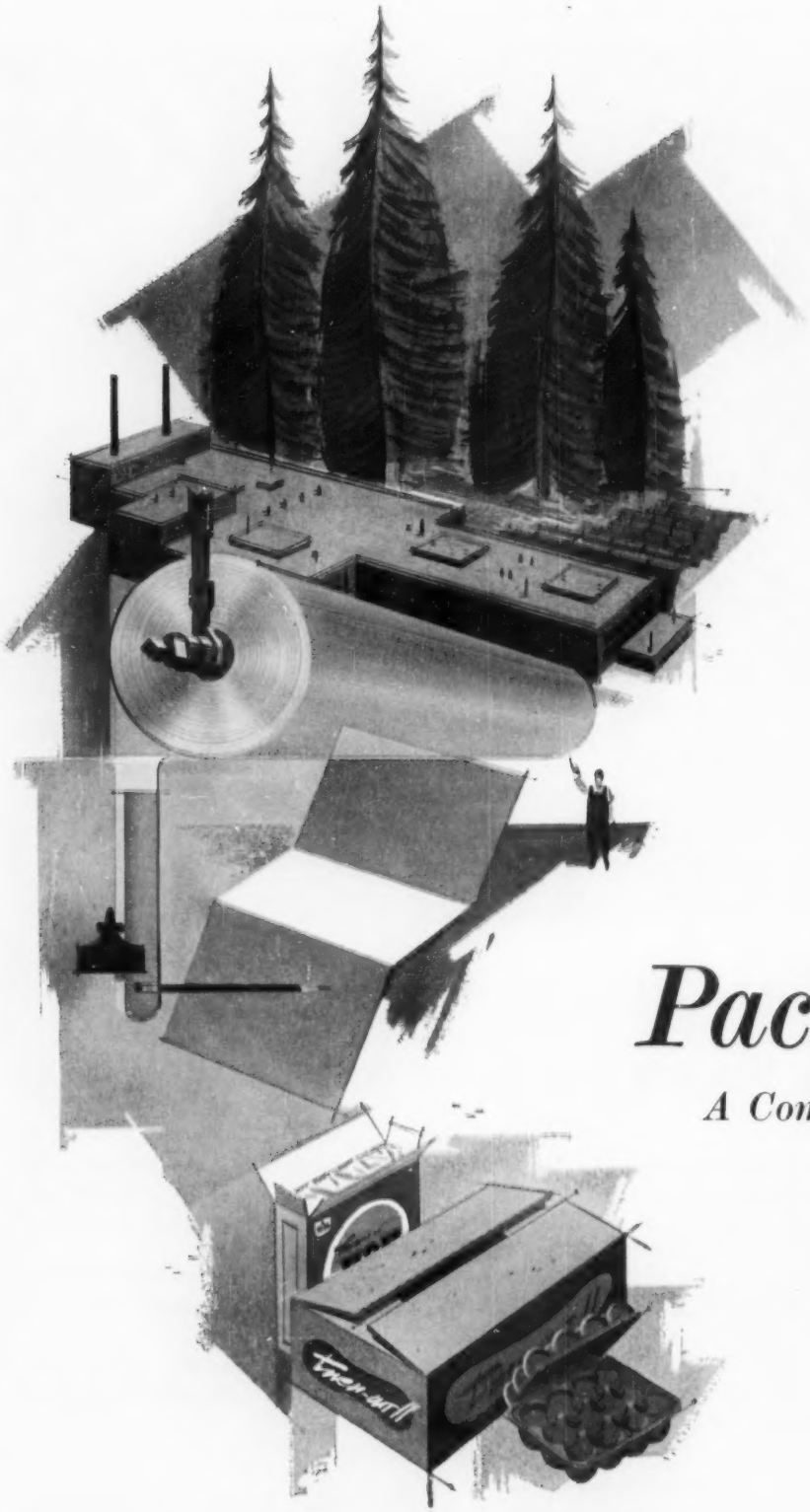

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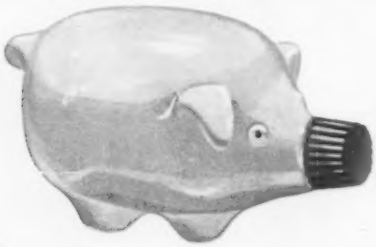
Wirz packaging specialists work wonders with plastics. Design consultants are prepared to add new product protection, user convenience and sales appeal to distinctive containers for drugs, cosmetics, industrial and household items . . . in either stock sizes or in custom designs.

PACKAGING



Package size and shape, color variety and decorating possibilities are virtually unlimited. Experienced craftsmen assure precision container quality. The wide scope of Wirz techniques permit tailor made package design in your choice of required plastic and metal packaging materials.

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PVC TUBES • PLASTIC AND ALUMINUM AEROSOLS

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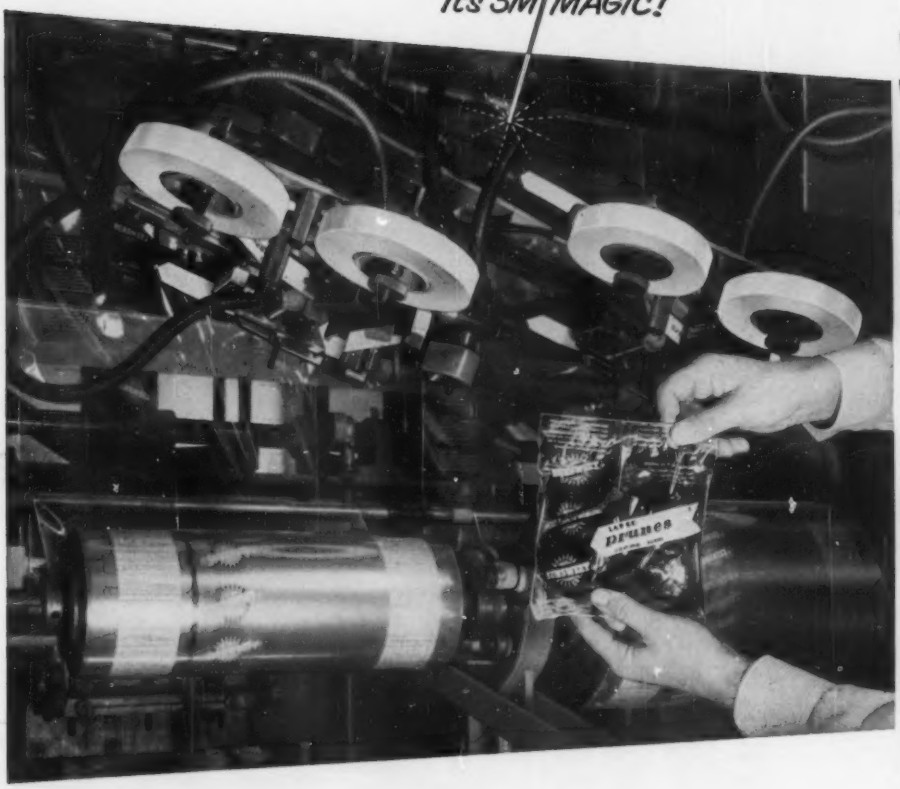

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TAPEnology streamlines bag inventories with high-speed custom labeling!

Now California's Sunsweet Growers use *one* basic pre-printed film as bag stock for a wide variety of packaged fruits. Printed "SCOTCH" Brand Cellophane Tape lets them change a pack label just by changing the tape rolls.

Basic film stock is pre-printed with brand name and slogan only; bags are individualized for each specific product with form-cut strips of the tape printed *on the adhesive side* and applied to the inside surface of the film stock. Entire operation is automatic at high speed using a custom-built applicator designed with the help of a local tape printer-converter and 3M's Customer Engineering Service.

What do you pack? Chances are, the ingenuity and technical resourcefulness used in this Sunsweet operation can also help you find a better way to package—at higher speeds and with lowered costs. Ask your regular "SCOTCH" Brand Tape Distributor, or write: 3M Co., 900 Bush Ave., St. Paul 6, Minn., Dept. IAJ-99.

When tape costs so little, why take less than "SCOTCH" Brand?

"SCOTCH" is a registered trademark for the pressure-sensitive adhesive tapes of 3M Co., St. Paul 6, Minn. Export: 99 Park Ave., New York 16. Canada: London, Ontario.

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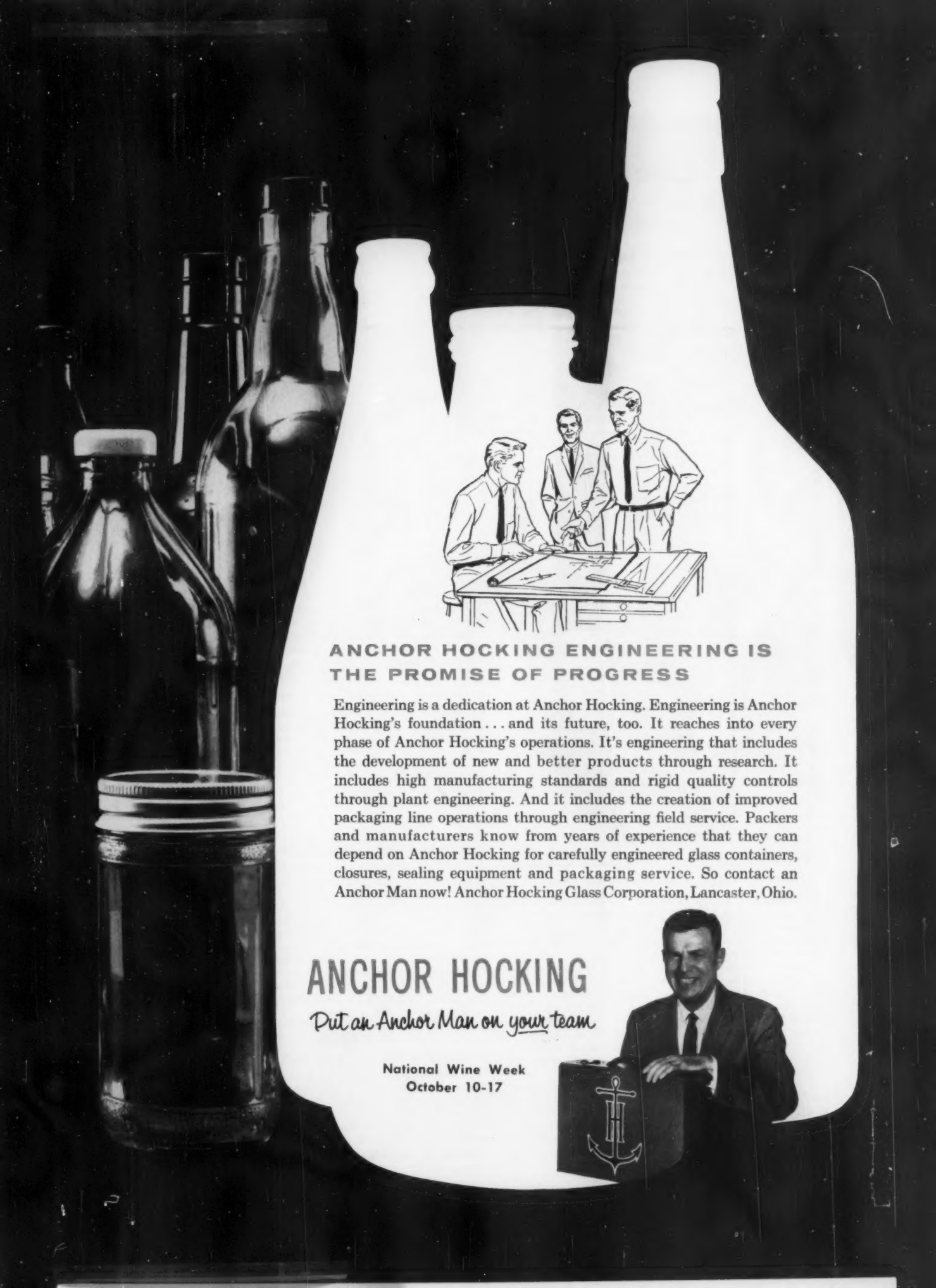
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Equipment & Materials

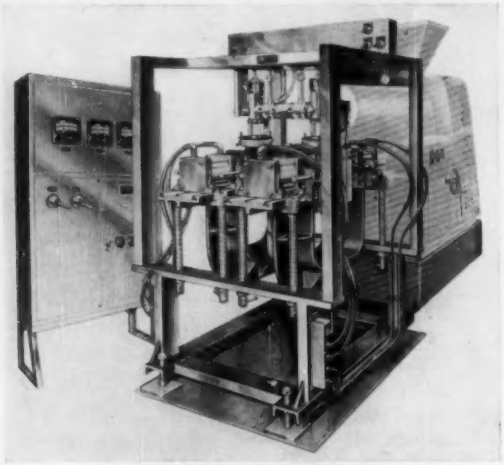
A MODERN PACKAGING editorial feature

One machine makes many types of carton

New from Colt Packaging Machinery is the Model BM Rite-Size box machine. The supplier claims that its new unit will produce, from corrugated sheet, unlimited styles and sizes of shipping cartons (plus pads and liners) quickly, accurately and economically. Complete dimensional change-over reportedly can be made in about 90 seconds. According to the company, use of the machine will eliminate such costly packaging problems as maintaining large inventories of different styles and sizes of cartons, and obsolescence of inventories. All carton-making operations—slitting, slotting, scoring and cutting off—are performed automatically. The machine is equipped with four electric motors; one to provide hydraulic pressure, two for set-up of the machine and one to drive the slitter. Selector switches, limit switches and relays provide precision control of set-up and operation. *Colt Packaging Machinery Co., Cranston, R.I.*

Twin-head blow-molding machine

An automatic twin-head blow-molding machine that forms an unlimited variety of containers and other hollow items ranging from 1 to 34 in. long has been introduced by Boston Plastic Machinery. The supplier says its Diversamatic Model B can be operated with any extruder. It



Operating controls are housed in separate cabinet.

accommodates molds up to 36 in. long and 14 in. wide, with daylight up to 21 in. Any thermoplastic material can be handled, including low- and high-density polyethylene, polypropylene, nylon and acetate. Manual controls permit fast set-ups and test runs on the machine.

Production capacity varies according to the size of the item to be molded. The supplier reports that in a test run using high-density polyethylene, the following speeds per hour were achieved in the production of round containers: 2-oz. and 4-oz. size: 1,200 per hour; 8 oz.: 720; 12 oz. and 16 oz.: 660; 24 oz.: 600; 32 oz.: 540; 64 oz.: 420, and 128 oz.: 300. The number of units produced per pound of resin ranged from 113 two-ounce containers to three 128-oz. containers.

A significant feature is that identical or different molds can be run at the same time. Molds may be of single-cavity or of vertically strung multiple-cavity design. When different molds are used on each head, each parison (tube of hot moldable thermoplastic) can be run at a different temperature, says the supplier, because the temperature for each head and the main feed are controlled by three individual pyrometers. According to the supplier, symmetrical or non-symmetrical items can be molded, with continuously uniform parisons assured at all times. Parisons ranging from ½ in. to 4 in. outside diameter can be produced. Variations in parison wall thickness are handled by regulating the vertical separator.

The unit's operating cycle is illustrated in Figs. 1 and 2. While the left-side mold is open preparatory to receiving

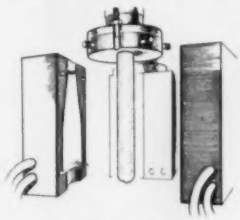


FIG. 1

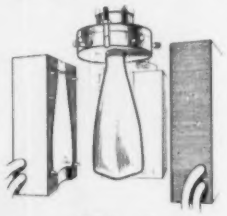


FIG. 2

the parison, the right-side mold is closed in the blowing and cooling cycle. Timing is synchronized so that as the parison reaches correct size for the left-side mold (which begins to close), the right-side mold opens automatically and the molded item is ready to eject. The sequence then repeats in reverse and cycles are continuous and automatic. If only one mold is to be used, the extruder stops automatically after each extrusion of the parison, to allow for blowing and cooling. This also is a continuous cycle. *Boston Plastic Machinery, Inc., 215 "A" St., Boston 10.*

Electronic universal parts counter

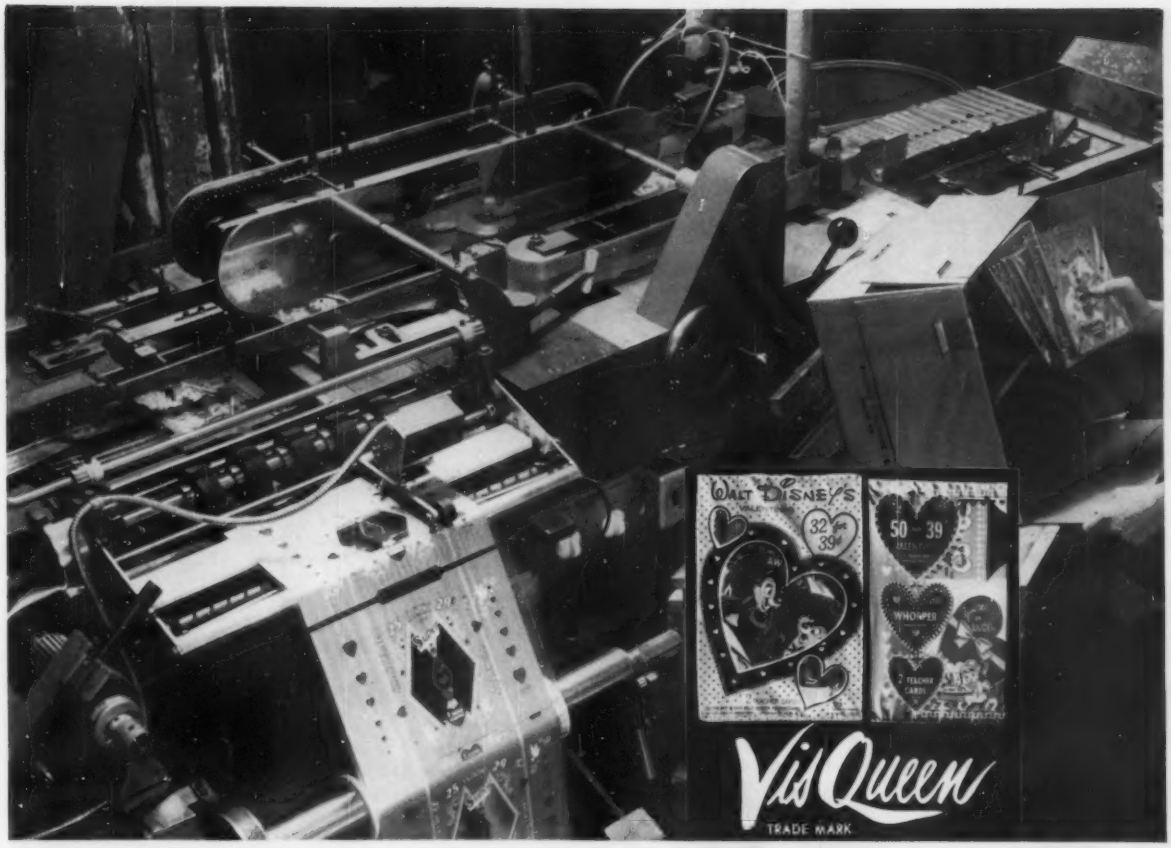
Atronics' Model 605 is a fully transistorized electronic parts counter that is claimed to count at speeds up to 20 pieces per second. It can accommodate parts ranging in weight from 1/20 oz. to 1 lb. Specific quantities can be counted out for packaging into pre-selected group sizes or items can be counted continuously and a total shown, as for inventory. According to the supplier, the new unit is extremely flexible and can count parts of any shape, made of any material. *Atronic Products, Inc., Bala Cynwyd, Pa.*

Inflatable seamless metal tubing

Experimental production of thin-wall seamless metal tubing that can be shipped in ribbon form and inflated at the point of use will be begun this fall by Wolverine Tube. The material will be known as "Strubing." It promises obvious shipping economies. The supplier also claims that the cold-rolling process used in its manufacture is an economical means of producing thin-wall tubing of materials and in thicknesses that are available today only at prohibitive cost. The material, in metal-foil thickness, is suggested in the packaging of frozen foods, toothpaste and other products. The same material, with heavier walls, can be used in the canning industry, the company says. *Wolverine Tube, Div. Calumet & Hecla, Inc., Allen Park, Mich.*

Plastic-vial unscrambling unit

U. S. Engineering is introducing an unscrambler for plastic vials and similar items. It reportedly will unscramble and set vials, four at a time, onto a moving conveyor at a rate of more than 120 per minute. An inclined cleated conveyor running through the machine's supply hopper picks up and partially orients the parts, depositing them onto a four-track orienting and discharge system. Excess vials are automati-



The automatic packaging film that helps Whitman Valentines win retail hearts and holds the line on costs

"Superior uniformity, greater economy gave us a better package for less money," say Whitman Publishing Company, a subsidiary of Western Printing and Lithographing Company.

"VISQUEEN film's superior uniformity of thickness—and hence greater strength—allows us to buy the most economical gauges. But far more than the cost of the film is saved when you get VISQUEEN film performance in automatic packaging. Superior strength, more stiffness and body; smooth, wrinkle-free winding save money through faster production; less waste and down-time; speedier, surer closure and forming. MILPRINT designed and printed our wrap." ROBERT CRISTENSEN

VISQUEEN polyethylene film will not become brittle at low temperatures. Gets a warm reception from retailers when you ship in zero weather. VISQUEEN film will not age, grow yellow, dry out. Lengthens shelf-life, permits stock carry-over of seasonal items.

VISQUEEN film strength reduces package breakage, soilage, markdowns.

It's VISQUEEN film; the polyethylene specially formulated and manufactured for high speed automatic packaging.

Dealers—Address inquiries to Whitman Publishing Company, Racine, Wisconsin.

VisQueen TRADE MARK FILM

PLASTICS DIVISION **VISKING COMPANY** *Division of* UNION CARBIDE *Corporation*
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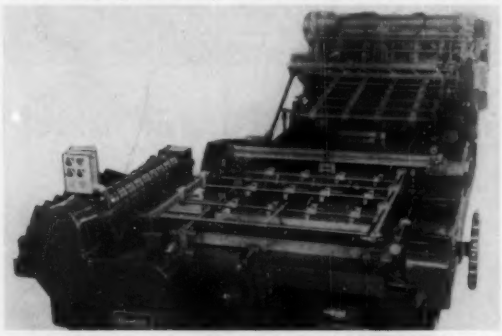
cally rejected back into the hopper. An escapement releases one part at a time from each track into the orienting wheel. Properly oriented parts pass directly through the wheel into a storage tube, ready for transfer onto the conveyor belt. Parts improperly oriented are detected and automatically indexed 180 deg., then are discharged properly oriented down the tube. The machine is adjustable for various tube lengths and diameters. *U.S. Engineering Co., 40-24 22 St., Long Island City 1.*

Versatile new rotogravure press

Champlain says its new integrated rotogravure press, the "Cavalier Carton-Maker," has been designed for fast job change-over and for economical production of relatively small quantities of cartons. The new press consists of a turnover two-position roll stand; a single, integrated infeed comprising butt splicer, pre-feed and constant-tension feed units, and five rotogravure color units, one of which is equipped for printing on the reverse side of the web. A feature of the press is a new drive system that is claimed to eliminate backlash, thus assuring stability of operation and fine process register. Another feature is a heavy-duty carton cutter-creaser with a 20-by-20-in. die area. The supplier says it is guaranteed to hold cut-to-print accuracy within plus or minus 0.0001 in. on average-quality cartonboard, with operating speeds up to 18,000 impressions per hour. *Champlain Co., Bloomfield, N.J.*

Slitter processes 44-by-44-in. sheets

A new addition to Bliss' line of container-making equipment is a duplex slitter for processing 44-by-44-in. sheets, either lithographed or unprinted. The machine, Model 5325,



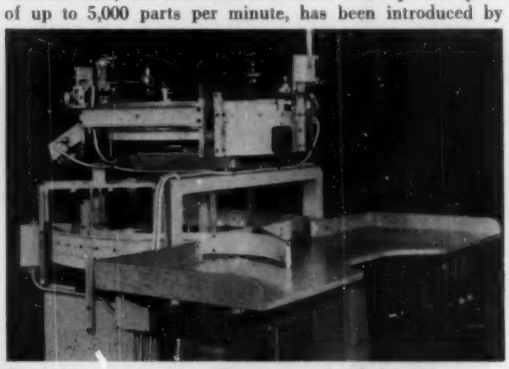
is available as a squaring or body-blank slitter. In the latter application, its operating speed is 30 to 35 sheets per minute, the supplier says. The slitter consists of two units mounted on a base and driven in unison. The first table retracts, providing room to grind the cutters on the second slitter and for set-up. Feed-out rolls are provided on both slitters. Back-up rolls for the feed-out rolls on the first slitter are reported to prevent deflection and to insure precise delivery of strips to the second slitter table. Rotating magnets, in conjunction with a mechanical hold-down device, provide positive separation and pick-up of the strips. *E. W. Bliss Co., Canton, O.*

Glue-forming machine with improvements

New from Head-Seal Packaging is a machine for forming trays and cartons with adhesives—at reported speeds up to 70 per minute—using such difficult-to-handle stock as hard-finished kraft and foil-laminated board. According to the supplier, the new unit has four outstanding features: (1) a closed glue system that does away with glue pots and roller applicators and minimizes down time; (2) hydraulic compression, with pressure adjustable from 4,000 to 18,000 lbs.; (3) positive vacuum feed, and (4) quick size change, afforded by pre-set, dowelled change parts. *Head-Seal Packaging Corp., 405 Lexington Ave., New York 17.*

Exact-count small-parts packaging

An electronic machine that counts small parts, such as machine nuts, and fills them into boxes at a reported speed of up to 5,000 parts per minute, has been introduced by



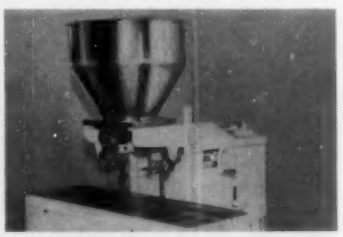
Batchelder Engineering. The company's Model 636 conveys empty paperboard boxes to a filling spout, accurately counts out a predetermined quantity of parts as they drop into the container, and returns the filled box to the operator for closing. The electronic counting unit has a counting range of one to 1,000 pieces per package, and can be adjusted by turning three knobs on the machine. Change-over from one size of article to another is reported to take an average of five minutes. The new unit can handle a wide range of box sizes, up to 4¼ in. wide, 8 in. high and 8 in. long. It features a centrifugal disk feeder combined with a trickle-flow control that is claimed to offer high production speed with exact parts count. *Batchelder Engineering Co., Springfield, Vt.*

Uniform imprinting on pillow packs

Filled thermoplastic pillow packs (such as are used for packaging chemicals, oils, cosmetics and other liquids or semi-liquids) can be imprinted automatically with its new Model 45A marking machine, says Markem. Use of the unit eliminates the non-uniformity of hand stamping, the supplier reports. Adjustable gauges on the machine's work-holding fixture enable the operator to register imprints on the pillow packs. Production speed, including changing adjustable type in the printing plate, is reported to be about 50 packages per minute. The new unit uses air-dry inks, available from the supplier in a variety of colors. Maximum imprint area of the bench-mounted machine is 6⁹⁄₁₆ in. by 2⁷⁄₁₆ in. *Markem Machine Co., Keene, N.H.*

Adjustable two-line production filler

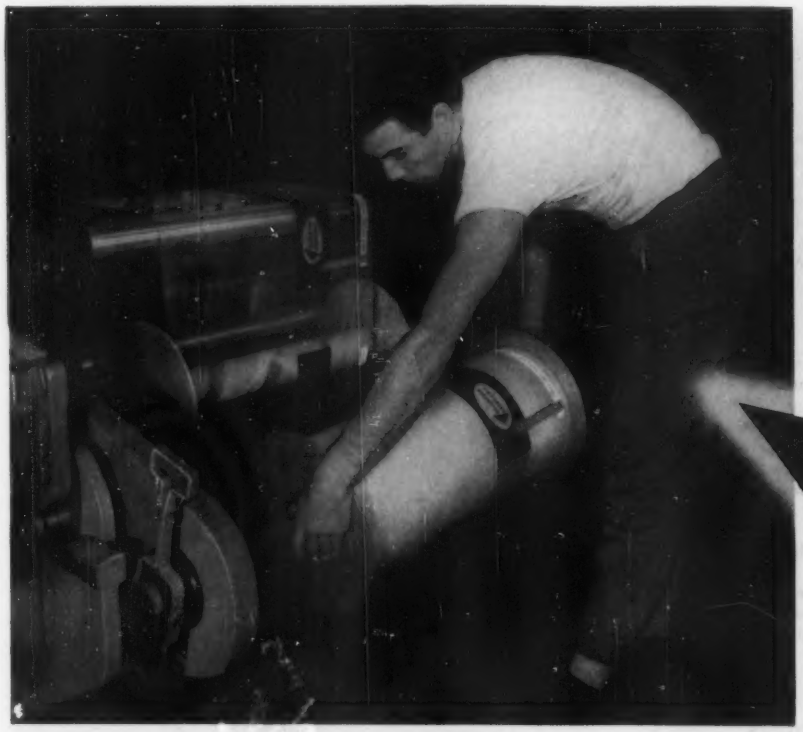
Production rates of up to 60 fills per minute are claimed by Colton for its new Colton-Hope Model 15RF-2 two-line machine for filling cans, bottles, jars or paper cups with semi-viscous or viscous products. The new unit features an adjustable filling-head assembly controlled by a handwheel to accommodate containers of different heights. It has a filling range of ¼ oz. to 1 quart. A rising table permits bottom-up fill on the machine, whose operating parts are enclosed and located out of the product zone. The unit's fill accuracy is reported to be within 0.5% by volume. A stainless-steel hopper has a capacity of 80 quarts. *Arthur Colton Co., 3400 E. Lafayette Ave., Detroit 7.*



Spring-grip padded edge cushioning

Its "Edg-Pak" spring-grip cushioning material offers ease of use, efficiency and low-cost protection in the packaging

[*Continued on page 178*]



use BBD PRODUCTS

For your FLEXOGRAPHIC PRINTING

BBD flexographic inks are developed and tested in modern research laboratories to assure you of superior trouble-free performance in your plant. Years of field experience with BBD flexographic inks have proved their superiority on standard flexible packaging materials . . . or on custom applications. Why not get acquainted with BBD's line of modern flexographic inks . . . and the down-to-earth service that goes with them. You'll appreciate both.

For more information on any BBD product, please call or write:

	Cellophane: Plain	Cellophane: Moisturepoof	Cellophane: Strata- and polymer-coated	Polyethylene (treated)	Aluminum foil	Paper & Board	Glassine	Pliofilm	Saran	Vinyl	Polystyrene	Acetate	"Mylar" & other Polyester films
ACETOPAKE												•	
EXCELLOPAKE 400 X-TRA	•	•		•	•	•	•						
FLEXOKRAFT						•	•						
FOILBRITE					•								
SPEED-E-BRITE	•	•	•	•	•	•	•		•*		•*	•*	•
THERMOFAST		•											
TRANSLUSTRO						•	•						

DOUBLE DUTY INKS for FLEXOGRAPHIC or GRAVURE PRINTING

HYDROTONE						•							
MUL-T-BRITE	•	•	•	•	•	•	•						•
PLIOPAKE								•	•	•	•		
SAFE-T-BRITE	•		•	•	•	•	•						•
VELVATEX						•	•						

**Depending on end-use*

GPI Sun

Branches in all principal cities

Bensing Bros. and Deeney Flexographic Inks

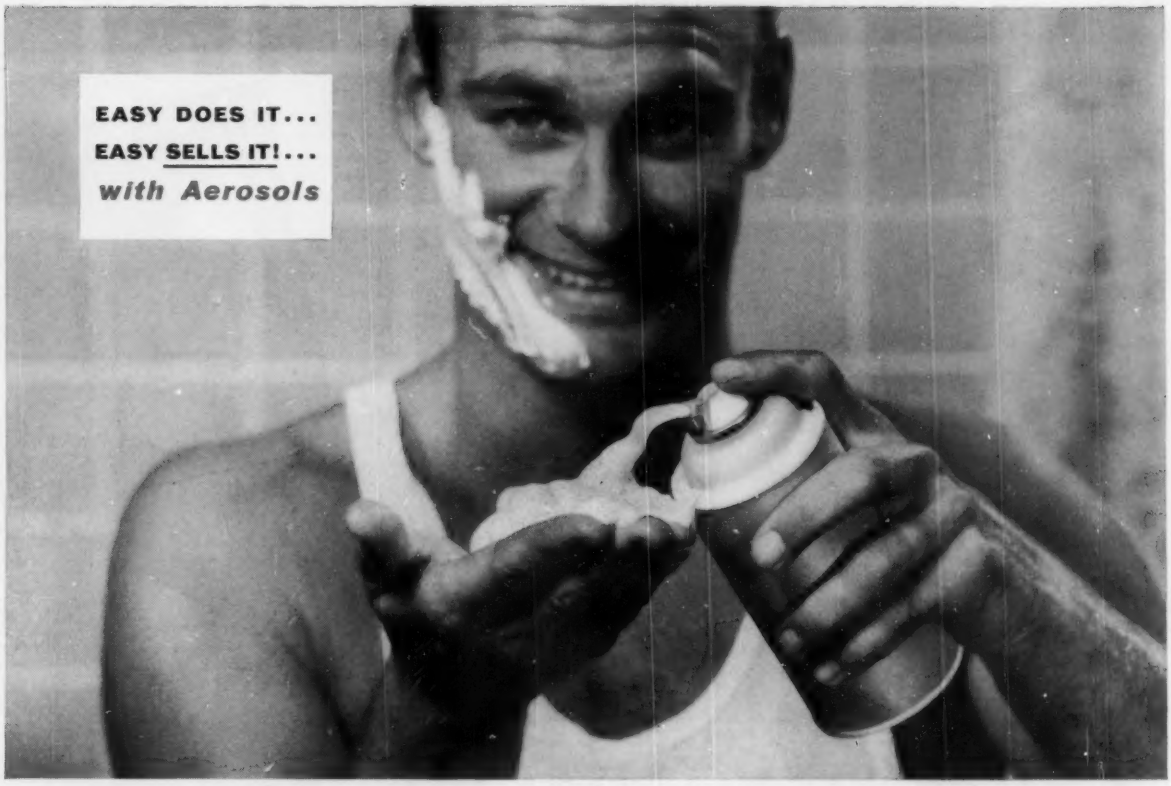
Product of

General Printing Ink Company

Division

Sun Chemical Corporation

750 Third Avenue, New York 17



Easier-to-use aerosols SHAVE TIME!

How the magic touch of aerosol packaging has softened up the shave cream market

By majority vote at the cash register, most shavers agree: an aerosol shave is a faster, cleaner, easier shave! These advantages of pressurized shaving lathers sold over 50 million cans in 1958. They accounted for a greater dollar volume than the sales of *all* shaving creams, shaving soaps and shaving sticks combined!

Perhaps *you* have a product which could really soften up a market if packaged in aerosol form. If it can be sprayed, poured, brushed, dusted or daubed—then it's a likely prospect for aerosol packaging. And here's how General Chemical can help you.

Market Information—Helpful facts and figures on the aerosol market are available to present and potential aerosol marketers.

Expert Technical Service—General Chemical has one of the most complete aerosol development laboratories in the country. We will be glad to help you develop the right propellant and formulation compatible with your product, its container and its uses.

Technical Data—The results of our continuing research into new and better aerosols—including information about promising new aerosol formulations developed in our "Genetron" laboratories—are published regularly in special bulletins and reports. Ask to be put on the mailing list for this advanced information.

Contract Fillers—We will also be glad to put you in touch with highly capable contract fillers in all parts of the country who will put up your product in aerosol form for test marketing and handle full commercial production, as well.

For further information—or if you would like to arrange for a special market presentation—write today to "Genetron" Dept., General Chemical Division, Allied Chemical Corporation.

genetron®

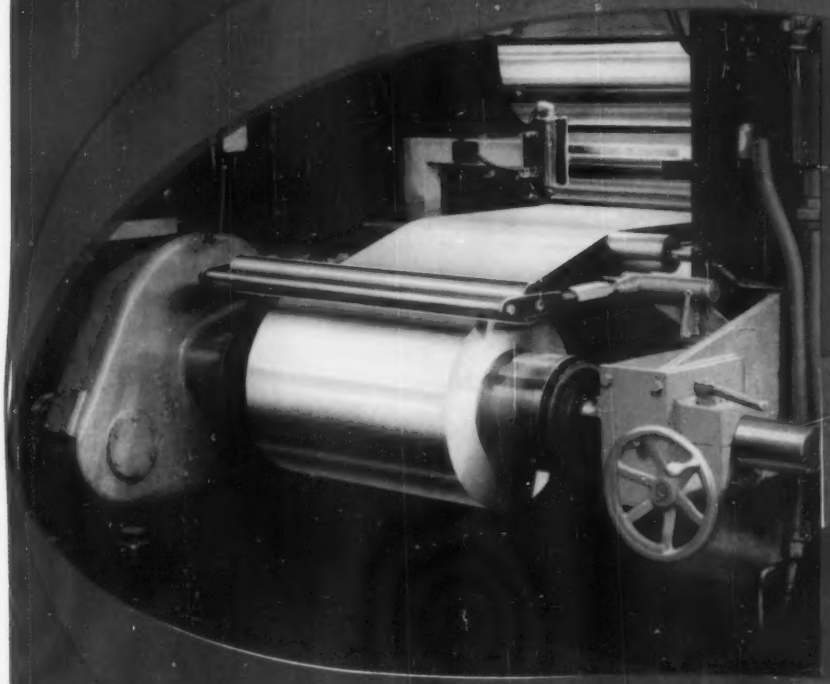
aerosol propellants

Putting the "push" in America's finest aerosols

Allied Chemical

GENERAL CHEMICAL DIVISION

40 Rector Street, New York 6, N. Y.



Foil Plus

An independent producer with one of the most modern plants in the Nation, Aluminum Foils, Inc. offers completely integrated production beginning with our casting facilities. We supply highest quality foil in widths up to 40 inches, gauges from .0002" through .006" and in all tempers and finishes. In addition, our outstanding chemical and metallurgical staffs will be interested in helping you solve present problems or perfect new processes. Just write or call

ALUMINUM FOILS, INC.

JACKSON, TENN.

155 East 44th St.
New York, N. Y.

69 W. Washington
Chicago, Ill.

Box 325
La Habra, Calif.

Hanna Building
1422 Euclid Ave.
Cleveland, Ohio

Meadows Building
North Central Exp.
Dallas, Texas

HIGHEST QUALITY
TRADE MARK

Aluminum Foils, Inc. also has the only plant in the United States devoted exclusively to the production of Raffinal,® the ultra high purity aluminum guaranteed 99.992 per cent pure.

NEUTRAGLAS MOLDED CONTAINERS

Available in a complete range of capacities in a special formula borosilicate glass which provides the greatest resistance to chemical attack.

COLOR-BREAK AMPULS

Grip—bend—snap! Opening a COLOR-BREAK ampul is that easy. No filing, sawing, scoring! Your parenterals will maintain utmost purity and potency.

OPTICLEAR STOPPER VIALS

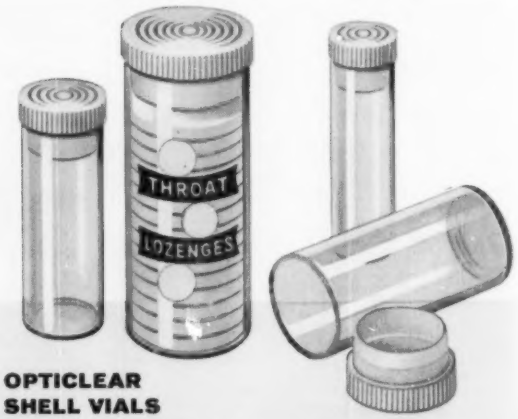
The aristocrat of all packages! Available in 1-dram to 12-dram sizes with Opticlear plug-type or telescopic "no-cotton" stoppers.

OPTICLEAR SNAP-CAP VIALS

Snap! The closure's on tight! Pop! It's off! Truly a convenience package. In full range of sizes.

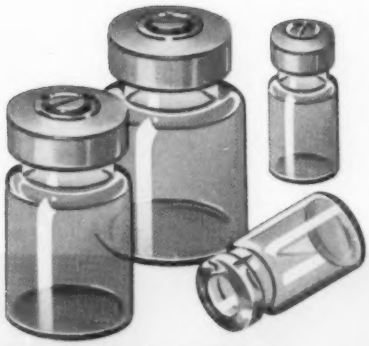
OPTICLEAR SCREW-CAP VIALS

Produced in full range of sizes for packaging liquid or dry products. Opticlear Screw-Cap Vials are produced in a choice of white or black metal or colorful molded closures.



OPTICLEAR SHELL VIALS

Designed and priced for mass packaging. Wide range of diameters and lengths for packaging a variety of dry products.



ALUMINUM SEAL VIALS

Produced on special order in 1 ml to 30 ml sizes in Types I, II, and III flint glass and in Type I amber glass.

SYRINGE CARTRIDGES

Designed to meet your most exacting specifications. Plain or permanently decorated.

KIMBLE SHORT VIALS

New addition to the Opticlear plug type, Snap-Cap and Screw-Cap Vial lines. Combines squat design and stability with clarity, light weight.

There's a Kimble Glass Container to solve your packaging problem...

The protection is in the package... because the package is made of GLASS!

Here they are! Kimble's handsome, crystal-clear "showcases" for your liquid or dry products . . . the ideal answer to your packaging problem at a price you can afford!

When you send your products to market in Kimble Glass Containers, you give them these important advantages:

1. Unique protection. Because they are made of glass, Kimble Containers are incapable of altering the products they contain. The impervious quality of glass, coupled with Kimble's tight-fitting closures, keeps your products fresh and clean—free from dust, dirt and moisture.

2. The sales-building eye appeal of sparkling glass.

3. Personalized decorating with permanently applied color lettering and colorful closures.

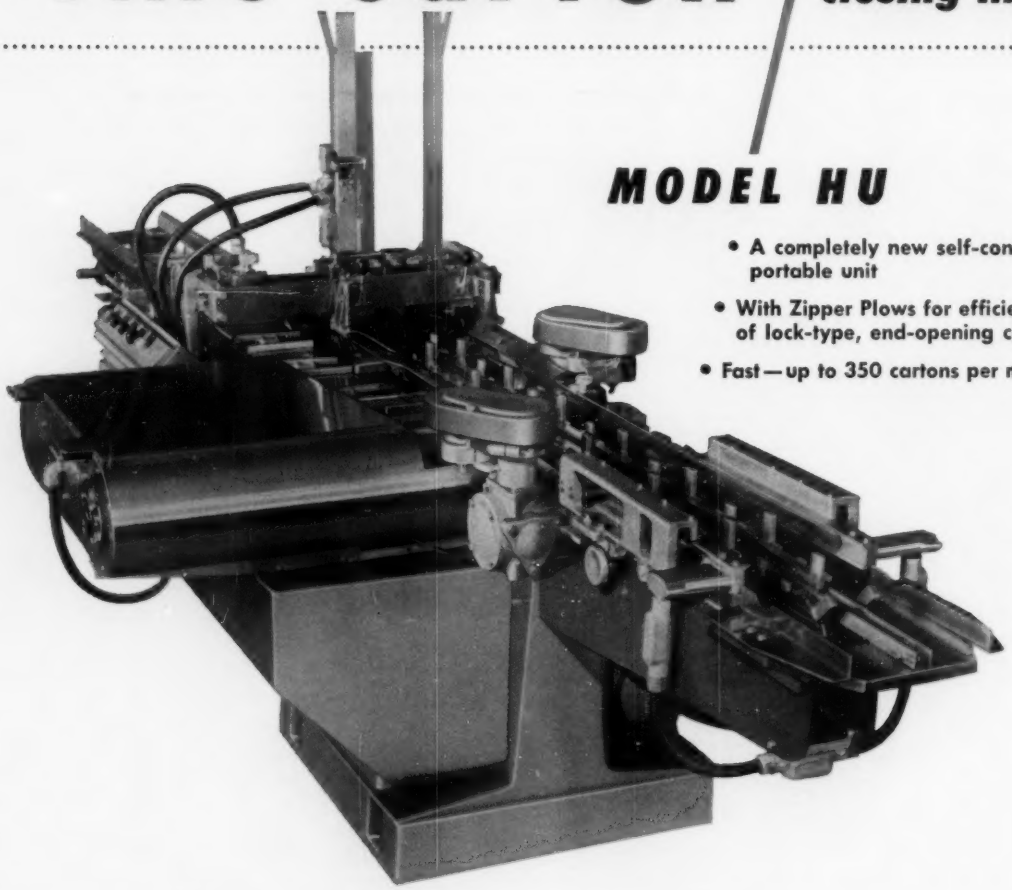
Call on Kimble for answers to *your* packaging problems. We invite your inquiries for information, prices and samples. Just write Kimble Glass Company, subsidiary of Owens-Illinois, Dept. MP-9, Toledo 1, Ohio

KIMBLE CONTAINERS
AN (I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

NEW fmc carton set up filling & closing machine

MODEL HU



- A completely new self-contained portable unit
- With Zipper Plows for efficient closing of lock-type, end-opening cartons
- Fast—up to 350 cartons per minute

Simply plug it in, fill the carton feed magazine with flat cartons, flip the "start" switches, and your FMC Model HU Carton Handling Machine takes over—giving you one of the smoothest high speed automatic machine operations in your entire plant.

No other carton handler – packaging such products as pies, TV dinners, ice cream cakes and pizza pies – gives you all these advantages:

1. **High speed** in continuous, automatic operation – up to 350 cpm, depending on product.
2. **Panel-board controlled** for low cost, one man operation.
3. **Trouble-free operation** and long machine life – this is ruggedly designed and precision constructed equipment.
4. **Portable** for roll-around positioning in various working areas.
5. **Versatile**—engineered for quick and easy adjustment to handle a variety of products requiring carton dimensions ranging from 6⅜" to 14" long by 3" to 10½" wide, flaps open.
6. **Sanitary, easy to clean**—constructed of stainless steel and aluminum, and to NEMA 4 Electrical Code.

You're sure to want complete information on this outstanding FMC unit. Write today, or ask your FMC representative to call.

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION
Canning Machinery Division
General Sales Offices:
WESTERN: SAN JOSE, CALIF. • EASTERN: HOOPESTON, ILL.

Q: And what else do you associate with STAN-PAK?

Certainly...

NEW fmc carton set up filling & closing machine

MODEL HU

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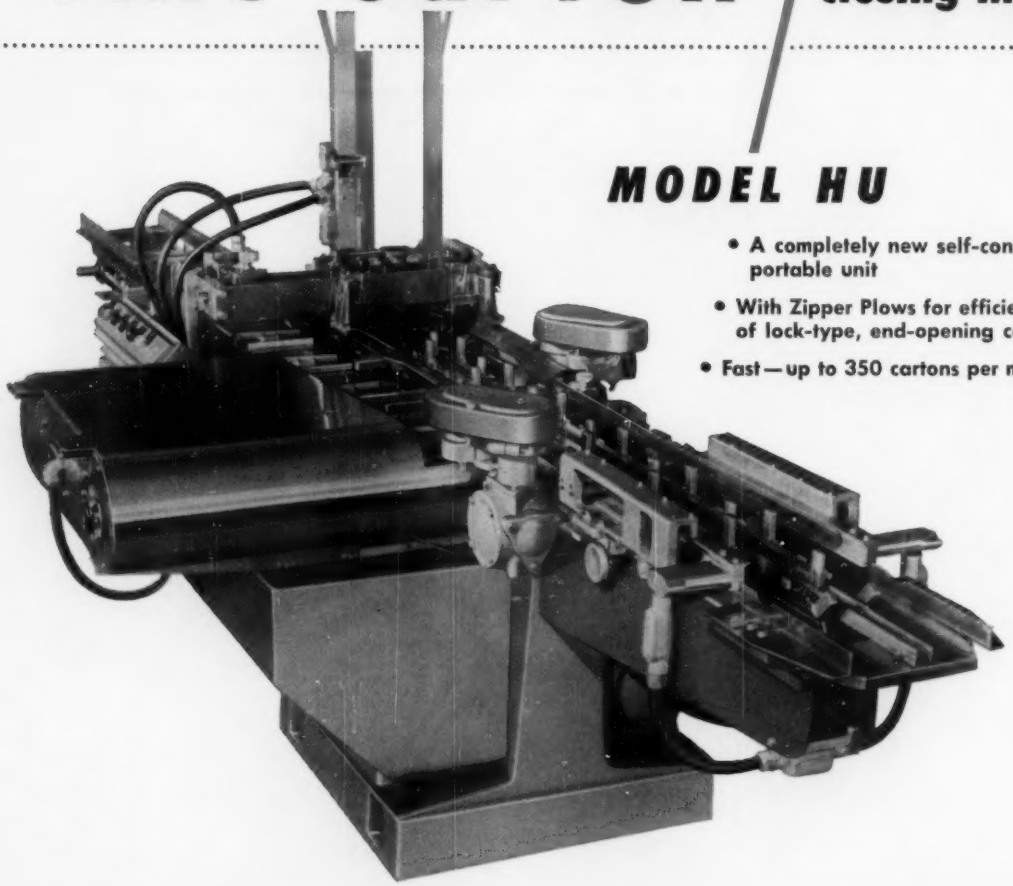
- With Zipper Plows for efficient closing of lock-type, end-opening cartons
- Fast—up to 350 cartons per minute



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Q: And what else do you associate with STAN-PAK?

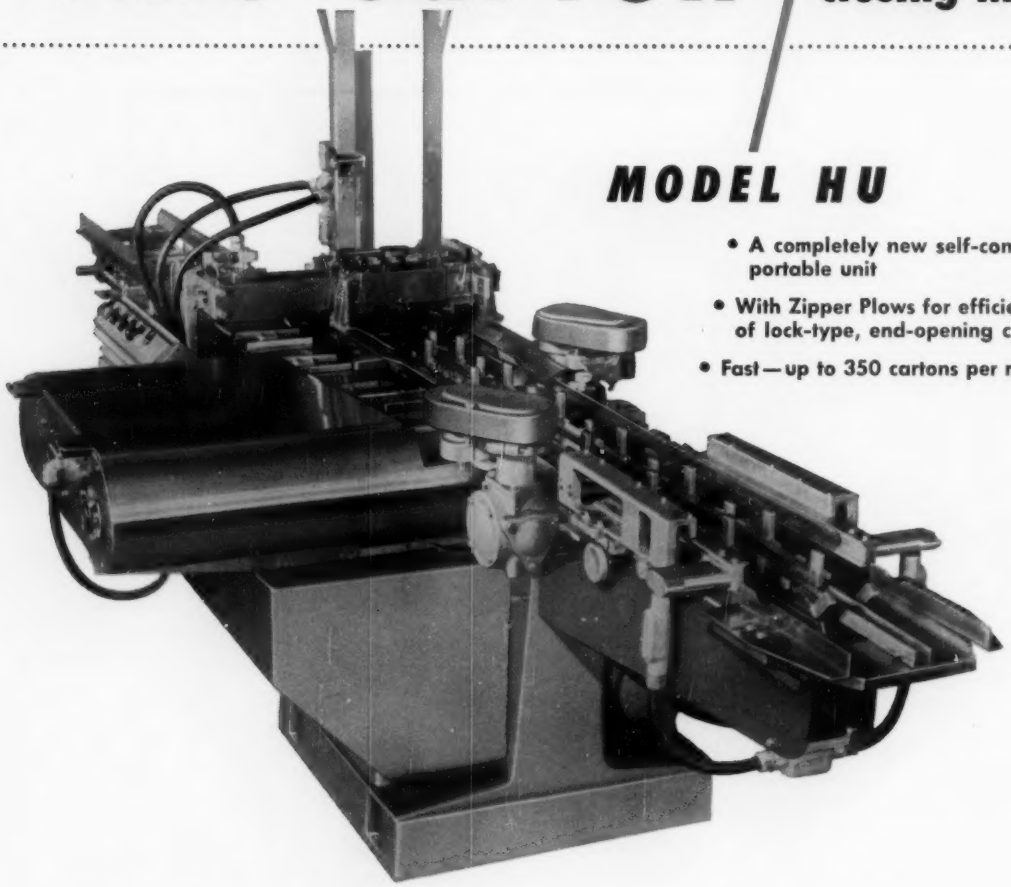
Certainly...

FILM PACKAGING

STAN-PAK™ offers you single-source convenience. Film, foil, paper and board. Laminations. Sheet and roll stock. Bags, pouches, boxes, sleeves. Labels. Lining materials. Inner and outer wraps. Vacuum and controlled atmosphere packaging. Special purpose containers. Nineteen mills and manufacturing plants. Sales offices throughout the United States.

NEW fmc carton set up filling & closing machine

MODEL HU



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Canning Machinery Division

General Sales Offices:

WESTERN: SAN JOSE, CALIF. • EASTERN: HOOPESTON, ILL.

Q: And what else do you associate with STAN-PAK?

Certainly...

FILM PACKAGING

One of the many areas in which STAN-PAK can help you get packaging mileage. Now one of the country's largest integrated packaging manufacturers, Standard Packaging offers you a comprehensive service, national in scope. Capacity . . . both manufacturing and creative. Representatives who know their business . . . and regard it as a privilege to study yours. STAN-PAK: a good company to know, and depend upon.

STAN-PAK™

STANDARD PACKAGING Corporation
America's fastest growing packaging source
Executive offices:
200 East 42nd Street,
New York 17, N. Y.

Subsidiaries:

Fonda Container Co., Inc.
St. Albans, Vt.

Standard Cap & Seal (Canada) Ltd.
Burlington, Ontario, Canada

Divisions:

Allegheny Label Division
Cheswick, Pa.

Bradley-Gilbert Folding Box Division
Louisville, Ky.

Chemical Fine Paper and Board Division
Holyoke, Mass.

Closure Division
Chicago, Ill.

Eastern Fine Paper and Pulp Division
Bangor, Me.

Flexible Packaging Division
Clifton, N. J.

Fuller Label & Box Division
Pittsburgh, Pa.

Gebhart Folding Box Division
Dayton, Ohio

General Felt Products Division
Brooklyn, N. Y.

Johnston Foil Division
St. Louis, Mo.

Missisquoi Division
Sheldon Springs, Vt.

Modern Packages Division
Los Angeles, Calif.

National Metallizing Division
Trenton, N. J.

Royal Lace Paper Division
Brooklyn, N. Y.

DOW

PACKAGING CHEMISTRY: ***Hand-in-hand with merchandising***

To meet the changing character of modern merchandising, management demands an ever critical look beyond its product to the package that takes it to market. Is it compellingly eye-catching? Does it protect the contents completely? Does it stand out in competition on the market shelf? From today's packaging chemistry at Dow come new materials . . . and new ways with a package . . . that can help you give affirmative answers . . .

New coating arms flexible packaging for today's sales battle

Saran resins add what it takes for new market conquests

Even today's fine packaging films have limitations which restrict their usefulness in certain applications. Now, thanks to Dow-developed Saran coating resins, manufacturers can have packaging films tailor-made to meet their specific product and market needs.

Here is one new way with a package that can have far-reaching effect on the merchandising of a host of highly diversified products.

Take the polyethylene tube illustrated here. It took only a thin coating of Saran resins to put the brilliant green of Procter & Gamble's new Prell Concentrate Shampoo on sales-making display. This in addition to supplying highly important product protection for which Saran is well known.

Coating with Saran resins opens up a world of new packaging opportunities for many packaging films, paper and molded polyethylene containers. It can result in a spectacular packaging innovation like this sparkling clear, unbreakable Prell tube . . . or in a new packaging concept that could quickly effect consumer preference for *your* product at a small cost.

Looking for a longer, more attractive shelf life? Extra product protection? Sparkling sales appeal? A coating of Saran resins may give your packaging film these benefits. Contact your packaging materials suppliers.

Perhaps your product calls for distinctive color and styling in a rigid package . . . or for specific protection. More new ways with a package . . . and with Dow packaging materials . . . are described on the opposite page . . .

PACKAGING INTERPRETATIONS UNLIMITED!

New ways with a package are natural with a material as versatile as Styron®! Now, with the development of many different Dow polystyrene formulations, cosmetic and pharmaceutical manufacturers have an even broader scope in the choice of an outstanding rigid container. Styron is performance-proved in engineering design flexibility . . . in reproduction of every minute detail . . . and for color styling unique in the packaging field. The stunning new compacts illustrated are excellent examples of the look, the feel, the over-all appeal of quality inherent in the Styron plastic container. For new impact at the point of sale, picture *your* product in a package made of Styron!

If food is your field and protective, flexible packaging is a must, there's a packaging clue for you in the following . . .

UNDERSCORING PROTECTION AND DISPLAY!

Nothing saves like Saran Wrap! It's the synonym for food protection in millions of homes . . . and it's taking hundreds of food products to new sales highs. Sparkling clear Saran Wrap* offers the lowest moisture vapor transmission rate of any available plastic film. It is ideal for packaging products that require maximum protection and taste-tempting display. Food products, like these walnut meats, not only *look* fresher but *are* fresher in Saran Wrap. Satin-soft and pliable, Saran Wrap has the *feel* for sales . . . and it won't cloud up or become brittle with age. Here is packaging that could put on a sales spectacular for you!

Three more ways with a package follow, but by no means exhaust the storehouse of packaging ideas at Dow . . .

*TRADEMARK

Before you choose a new package

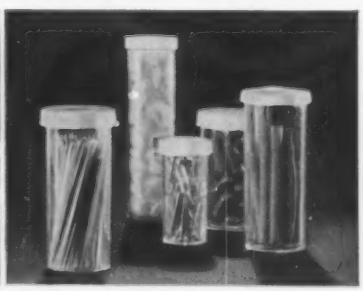
Let Dow experience in materials and marketing help put your product hand-in-hand with up-to-the-minute merchandising demands. Put packaging chemistry on your sales team. We'll be glad to discuss your packaging with you any time.

MORE PACKAGING AIDS TO MODERN MERCHANDISING

Bagging sales for dry products. Dow polyethylene coats paper bags with new moisture barrier properties . . . makes them stronger, more flexible . . . readies them for more protective packaging.

New eye-appeal for boxboard. Four-color printing is at its best on boxboard coated with Dow Latex. Food illustrations come clean and sharp to whet appetites . . . make sales.

Big sell for small items! Stock molded vials, boxes and novelty containers made of Styron offer unlimited opportunity for more effective unit merchandising of small items . . . from hardware to herbs.



DOW PLASTICS
BASIC TO PACKAGING

Molding Materials • Films
Film Resins • Sheeting
Coatings • Expandable Beads

Plastics Sales Department 1523CR9
THE DOW CHEMICAL COMPANY
Midland, Michigan

DOW

Niemand Bros. "Top Hits" Quartet

makes new records in tubular paper packaging!

More and more, producers are insisting that the package that brings their product to market offer sales appeal, product protection *and* economy. As a result, tubular paper packages by Niemand Bros. are proving their practicality more than ever before. These are tried and proved containers – built to protect your product in transit and on the shelf – designed for the appearance and dispensing convenience that moves your product off the shelf into the buyer's hand.

Our staff of package design consultants is at your service. You can put them to work for you by simply calling your Niemand representative. No obligation, of course.

CUSTOM PACKAGING
– for standout individuality

GOOSENECK CONTAINERS
– for efficient, economical small unit packaging

SIFTER TOPS
– with "eye-and-use" appeal for granular products.

PAPER CAP CONTAINERS
– for the ultimate in low cost utility

NB

NIEMAND BROS., INC.

Manufacturers of Paper Tube Products

45-08 Ninety-fourth St., Elmhurst 73, Long Island, N. Y.

Results like this

prove it on the press... you can't beat Trojan Foil!

Here's why...

Trojan Foil gives you these advantages... and more!

Labels printed on Trojan Foil assure you of better results because its superior surface smoothness lets you reproduce as many colors as you want . . . run as many press passes as you need. You have fewer registration problems . . . print with less ink. Yet you turn out finished jobs that win complete customer approval!

TROJAN Foil not only gives you outstanding printing results such as you see on the reverse page . . . it prints by letterpress, lithography, or flexographic process . . . die cuts, embosses, scores and folds perfectly. You can also count on TROJAN Foil to come to you trimmed to exact specifications, to run easier on the press. Proper packaging keeps Trojan foil *flat* for easier handling and easier running. And . . . equally important, when you specify TROJAN, you can be *sure* of prompt attention and service.

The Gummed Products Company
Troy, Ohio • A Division of **St. Regis Paper Company**

New convenient low-cost way to price-mark packaging

If you do business with chain, syndicate or department stores, you know that price-marked packages may often put your product on sale days earlier—save store time and handling.

But, printing prices in advance *can swell your stocks; and when prices change, your scrap baskets swell. You can cut inventories, avoid waste by imprinting prices* as needed—*with a Tickometer.*

- A Tickometer will imprint, mark, code, or date wrappers, bags, labels, small cartons—from 400 to 1000 pieces per minute. Gives good registration; handles most paper or card weights and finishes; in sizes from 1 by 2 to 15 by 15 inches, depending on the model. Feeds and stacks automatically, is easy to set and use.
- It also counts—sales slips, coupons, forms, job tickets, orders, time cards. *So accurate that banks use it to count currency!* Records partial totals, and can be set for a pre-determined count. With accessories, it can sign or endorse checks and number consecutively, do a wide variety of jobs in any factory or office.
- You can buy or rent a Tickometer. Pitney-Bowes service is nationwide from 302 points. Ask the nearest PB office for a demonstration. Or send coupon for free illustrated booklet and case studies.

Pitney-Bowes

TICKOMETER

Imprinting & Counting Machine

Made by the originator of the postage meter... offices in 121 cities in U.S. and Canada.

PITNEY-BOWES, INC.
4826 Walnut Street
Stamford, Conn.

Send Tickometer booklet and case studies.

*Name*_____

*Address*_____

COLOR-IMPACT PACKAGING . . . with the

Your product becomes its own best salesman when its color, shape and texture are seen in a clean, clear, colorfully designed cellophane package

Sight of the product is a powerful influence in stimulating sales, increasing turnover. That's why cellophane's pure transparency is so important in your package planning. It makes your product its own best salesman . . . shows *all* its appealing color, shape, texture.

What's more, cellophane is versatile. It offers you tailored protection . . . a variety of package constructions . . . high-speed machine efficiency . . . sparkling "alive" color printing. Du Pont has over 100 types of cellophane,

basic sales power of pure transparency

each designed to meet specific needs.

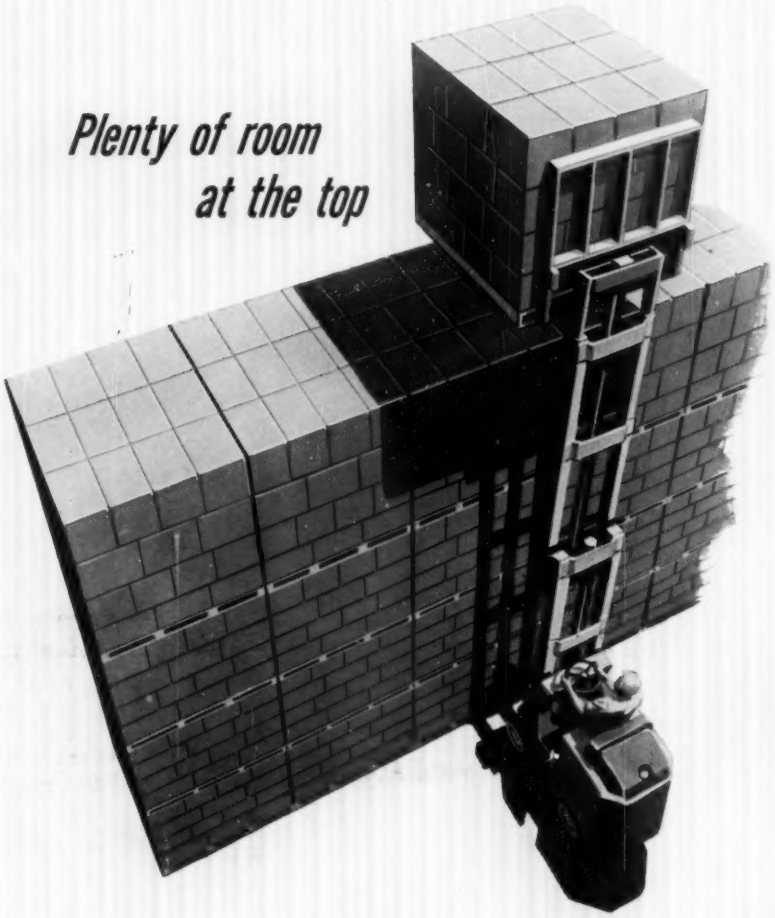
New "K" cellophanes—result of 35 years of transparent packaging experience at Du Pont—now give you greater brilliance, protection and durability. See how this experience can pay off in better, more profitable packaging for you. Contact your Du Pont Representative or, for printed films and bags, your Authorized Converter of Du Pont cellophane. E. I. du Pont de Nemours & Co. (Inc.), Film Dept., Wilmington 98, Delaware.

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

DU PONT cellophane

Plenty of room at the top



Filling your warehouse space to the limit? Hinde & Dauch corrugated boxes stack high and straight. Need better top-to-bottom protection for your product? Better see H&D.

Hinde & Dauch

Division, West Virginia Pulp and Paper

AUTHORITY ON CORRUGATED PACKAGING • SANDUSKY, OHIO
15 FACTORIES • 42 SALES OFFICES

Sounding Board

WE ASK THE READERS

What ways have you found to reduce packaging costs without loss of sales appeal?

Carl D. Schoby
Manager, Package Development
& Design Dept.
Armour & Co.

Our packaging costs are reduced without loss of sales appeal in two specific areas, namely, the physical aspects and the graphic approach.

Under the physical aspects, we often find it possible to reduce the size of the packaging material. This is particularly true on wrappers, where a diagonal wrap saves valuable square inches of material per package. Tests are constantly made to determine if a lesser caliper of material will suffice and if the addition of scoring or ridges will give necessary strength.

Cheaper substitute materials are investigated and when they can be used without weakening the package, we adopt them. In this connection we change the style or type of package and enhance the product.

Mechanization of the packaging operation is a continuing goal. Usually we find less material used in an automatic machine application; hand operations are inclined to be more wasteful.

Under the graphic approach, the most economical method of printing with the most faithful reproduction of vignettes is sought. This varies with the requirements of each individual job. We have no automatic procedures—each package is examined with economical printing in mind.

Standardization of colors is accomplished whenever possible, thus eliminating costly extra color as well as plate work. Our food illustrations are carefully checked and accessory items or garnishes are avoided whenever they merely add to reproductive costs without exciting sales appeal.

Printing runs are consolidated whenever possible to take advantage of larger-quantity rates.

Frequent change copy—such as ingredient statements, establishment numbers or signature lines—is handled in positive rather than reverse. We always attempt to keep this copy in a single color change. Our designers are instructed to keep change copy in line colors rather than the more costly process colors, which also adds to our facility in expediting these necessary changes in copy on our packages.

Roy Shawcross, *President, R & S Chemical Co.:* When we began our operation we used the familiar paper carton for our tube of Cushion Denture Grip, a 1-oz. aluminum collapsible tube. For better display, we later used a plastic box, either unmounted or mounted on a pegboard display card. The cost of this package became too high for this phase of our sales. We purchased a vacuum plastic-forming machine and skin packed for a few months, but found there was considerable opposition to the skin-packaged card due to some warping of the support card. Lately we have been making a complete plastic display package comprised of a rigid vinyl box base with a butyrate plastic cover drawn by vacuum over the white vinyl base. In addition to a pegboard punched hole located in a top extension, there was devised an easel-type back for individual display on counter top. This package reduced cost from about 6 cents per unit to 1¾ cents per unit. We are using our vacuum-drape machine for custom packaging products of other packagers as well as our own, so we can write off the cost of the machine over a greater diversity of products.

Y. C. Campbell
Plant Manager
The Warren-Teed Products Co.

In our pharmaceutical manufacturing and packaging plant employing about 90 people in production, many ways have been found for reducing packaging costs without the loss of sales appeal. Over a seven-year period a change has been made from largely hand work in packaging many items to automatic and semi-automatic operation. The number of items produced has been reduced and a greater sales effort applied to a few items.

This has made it possible to create greater lot sizes and, therefore, longer packaging runs on the remaining items. Bottles used in packaging tablets and capsules by hand had narrow necks, making it difficult to get the bottle filled fast enough to keep up with the semi-automatic labeling machines. Changing to the same-sized bottle, but with wide necks, not only increased our speed of filling, but also improved package sales ap-

peal, since customers could get the product out easier.

Aside from mechanical matters, cost reduction can be attributed to a great extent to the careful selection of people who work in the department. All men and women are given two psychological tests before taking up their work. They must rate 50%ile or better for women and 75%ile or better for men on the well known and reliable Bennett test for Mechanical Comprehension and 50%ile or better for men and 75%ile or better for women taking the equally well known Minnesota Rate of Manipulation test. By this, you can see that the people are chosen for packaging who are fast with their hands and forearms and who will be "at home" around light packaging machines that are currently in use on modern production lines.

By the methods mentioned above and the addition of a few new modern drug items, costs of goods sold figured as a percentage of the total gross sales have made the following downward trend: 1951—38.5%, 1952—37.1%, 1953—37.2%, 1954—35.8%, 1955—35.7%, 1956—34.0%, 1957—30.3% and 1958—26.8%.

D. J. Leeker
Manager, Informative Packaging & Labeling Div.
Sears, Roebuck & Co.

With rising costs in both labor and material and with a greater demand being made of each package because of its merchandising function, it is oftentimes difficult to reduce packaging costs without altering its effectiveness. There are, however, a number of methods which Sears has employed which have oftentimes increased the effectiveness of the package and yet have materially reduced the cost. We have made extensive use of in-plant imprinting equipment in order to simplify our packaging requirements from the converter. Multiple packs have not only decreased our packaging cost, but increased our unit sales. This twofold benefit has been realized by many manufacturing firms.

Materialwise, we have suggested and used lower-priced packaging materials on lower-priced merchandise. This has a tendency to keep packaging costs directly in line with merchandise cost. It also has a tendency to "trade up" the customer from lower-price goods to the more desirable top-quality merchandise. Side-seamed polyethylene bags have offered big savings over back-seamed bags and have afforded us an opportunity for a far better looking package. Tube stock too has been utilized when only front-panel printing is considered as necessary.

In addition to the above, there has been a general tendency to re-evaluate all packaging on a cost and effectiveness basis which has resulted in a substitution of "soft" films for "hard" films on soft-line merchandise and in some cases folding cartons for set-up boxes and set-up boxes for folding cartons.

We feel that the effectiveness of a package at the point of sale is all important and is actually a part of the product. It is, therefore, important to keep quality of product and quality of packaging in balance.

Charles Navratil
Merchandising Dept.
Ray-O-Vac Co.

We find a prime source of new ideas regarding better methods and better materials to be the salesmen of our established sources for packaging materials. Our key people in package design acquaint themselves thoroughly with these salesmen and the appropriate people in the suppliers' organization who work on design so that at all times there is a free exchange of ideas on our problems. From this exchange of ideas, our suppliers constantly come to us with new ideas. We find that the representatives of other companies who would like to become our suppliers are another source of ideas. We do not buy just packaging materials . . . we buy ideas. We challenge those who would like to sell us to find a way to do our packaging job better and cheaper.

Along with the constant study on new materials and methods from the sources of packaging materials, our engineering group studies new developments in automatic packaging techniques.

We find that it is important to have key personnel in design and engineering attend the various industry packaging sessions, because we can always learn from the success of other manufacturers. Many times a material or process adapted by another manufacturer for their products lends itself through unique adaptations to our processes and products. These people generally return with many ideas to be studied that lead to cost reduction on packaging with perhaps greater sales appeal or at least no loss of sales appeal.

The combination of these three factors gives us the biggest source of new packages for our company. We are constantly analyzing the packages we have and believe that whenever we come out with a new one, it is immediately time to begin working on its successor to make it even better.

Gene Douglas, *Executive Designer, Benolken, Douglas, Minnick, Inc.:* Key to an efficient, effective solution to a packaging assignment lies in a thorough analysis of all materials, construction and reproduction needs.

Once we have completed our preliminary study of the client's product, distribution, display and shipping requirements, we turn to the physical factors outlined above. Frequently the present packages and shipping cartons are not utilizing the full potentials of either materials or the reproduction or construction methods.

A fresh approach makes it possible to develop an effective display package or carton within the regular budget. Very frequently a new approach to color and design will produce superior merchandising impact with fewer colors and press runs.

In small appliances, cameras and tools, we have found that protective packaging can frequently be utilized effectively to produce [*Continued on page 227*]

U.S.I. POLYETHYLENE NEWS

A series for plastics and packaging executives by the makers of PETROTHENE® polyethylene resins

Packaging Notes

New polyethylene bag-making machine is capable of sealing polyethylene film up to 10 mil thick. The machine reportedly has better temperature control instrumentation than conventional machines. Sealing bar pressure is controlled pneumatically. Control of pre-dwell, dwell, and post-dwell times is by separate timers and the film is sealed in a completely relaxed state.

The machine can convert both blown tubing and flat film into bags. Its production rates are said to be comparable to other bag making machines.

Wafer-thin snap fasteners for polyethylene envelopes are now finding use in packaging retail soft goods. The fastener keeps the package closed, protecting the product, yet allows the customer to inspect the packaged product.

Freeze-it-yourself popsicles packaged in polyethylene-coated cellophane are now on the market in some parts of the country. The popsicles are sealed in pouches in liquid form for freezing at home. After freezing, the popsicles may be separated from each other and eaten by squeezing them out of the pouch. No sticks are needed. The film, cellophane with a 2-mil coating of polyethylene, is supplied in both printed and unprinted webs, generally four across for twin popsicles. The cellophane is printed before coating with polyethylene, locking in the printing.

Label adhesive for plastic surfaces is said to stick where average adhesives will not hold. It reportedly replaces pressure sensitive adhesives, which are slower and more costly to apply.

The adhesive is waterproof and permanently flexible. It will adhere to polyethylene, yet can easily be removed. The adhesive is applied by brush or automatic machine.

Polyethylene toothpaste tube has been developed. It is produced by an extrusion-injection molding method. A special coating is said to guard against loss of flavor and essential oils by permeation.

New flexible polyethylene bag with a sealed-in plastic tube serves as a "drink-from-the-package" container for fruit and vegetable juices, milk, soup, and soft drinks. The ready-to-use container simplifies disposal problems, speeds cooling, and is suitable for use in vending machines.

U.S.I. Develops Three New Resins With Improved Coating Properties

New PETROTHENE Resins Have Better Adhesion, Reduced Neck-in

U.S.I. has announced the availability of three new PETROTHENE polyethylene resins especially suited to paper coating. These new resins were developed in U.S.I.'s Polymer Service Laboratories and have successfully undergone extensive field testing.

The new resins show a marked improvement in adhesion to paper and other substrates. They also have shown reduced neck-in, smoking and polymer build-up at the die.

Neck-in, in particular, has been a troublesome problem in paper coating. It occurs when edges of the hot polymer web "neck" inward, carrying a thickened bead onto the paper. Neck-in results from a combination of resin properties and extrusion conditions. The new resins minimize the polymer's role in causing neck-in.

The resins are recommended for extrusion in the 575°-600°F. range, and cover a wide range of coating weights as shown in the chart at left.

U.S.I. COATING RESINS

PETROTHENE Resin	203-2	201-2	200-2
Melt Index	8.0	5.0	3.0
Density	0.915	0.915	0.915
Coating Weight	3-15 lb. per 3,000 sq. ft.	10-25 lb. per 3,000 sq. ft.	20 lb. or greater per 3,000 sq. ft.

Polyethylene-Coated Cup Is Tasteless, Odorless

A polyethylene-lined paper cup for hot drinks is reported to be completely tasteless and odorless. The coating eliminates sidewall staining and penetration.

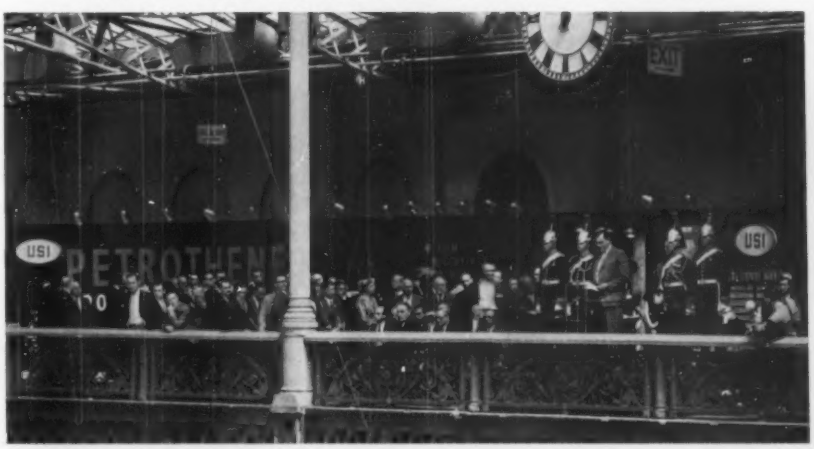
While ordinary plastic-coated paper cups are sprayed with material after they have been formed, the new cup is constructed from paper pre-coated with polyethylene. No glue is used in construction. The polyethylene itself serves as a seal for the seam and bottom, creating a bond that cannot be separated without tearing the fibers of the paper. The coating is said to be bonded firmly enough to the substrate to permit water to be boiled in the cup without damage to the cup lining.

The single wrapped cup nests closer — saving about one-third of the storage space normally required. The cup is available in six and eight ounce sizes, with or without handles.

New Package For U.S.I. Electrical Grade Resins

U.S.I. electrical grade PETROTHENE polyethylene resins are now being packaged in fifty-pound bags made of 10-mil polyethylene upon request. The bags provide added protection from moisture for the carbon-black compounded electrical resins which tend to pick up water vapor from the air.

U.S.I. at the International Plastics Exhibition



U.S.I.'s booth at the International Plastics Exhibition was the background for the opening ceremony, June 17th in Grand Hall, Olympia, London. Above, the Exhibition is being addressed by The Right Honourable Reginald Maudling, Paymaster-General, who stands between trumpeters of the Royal Horse Guards.

Yes, its polyethylene

Add brilliant printability to the clarity, toughness and other well-known advantages of polyethylene film, and you have a packaging material that can be a powerful merchandising tool for your products. Polyethylene film can be economically printed with clear, bright colors at high speeds and with sharp registration and good ink adhesion. Packages can be formed on automatic equipment—sealed by heat-sealing or with adhesives.

Opens New Packaging Film Markets

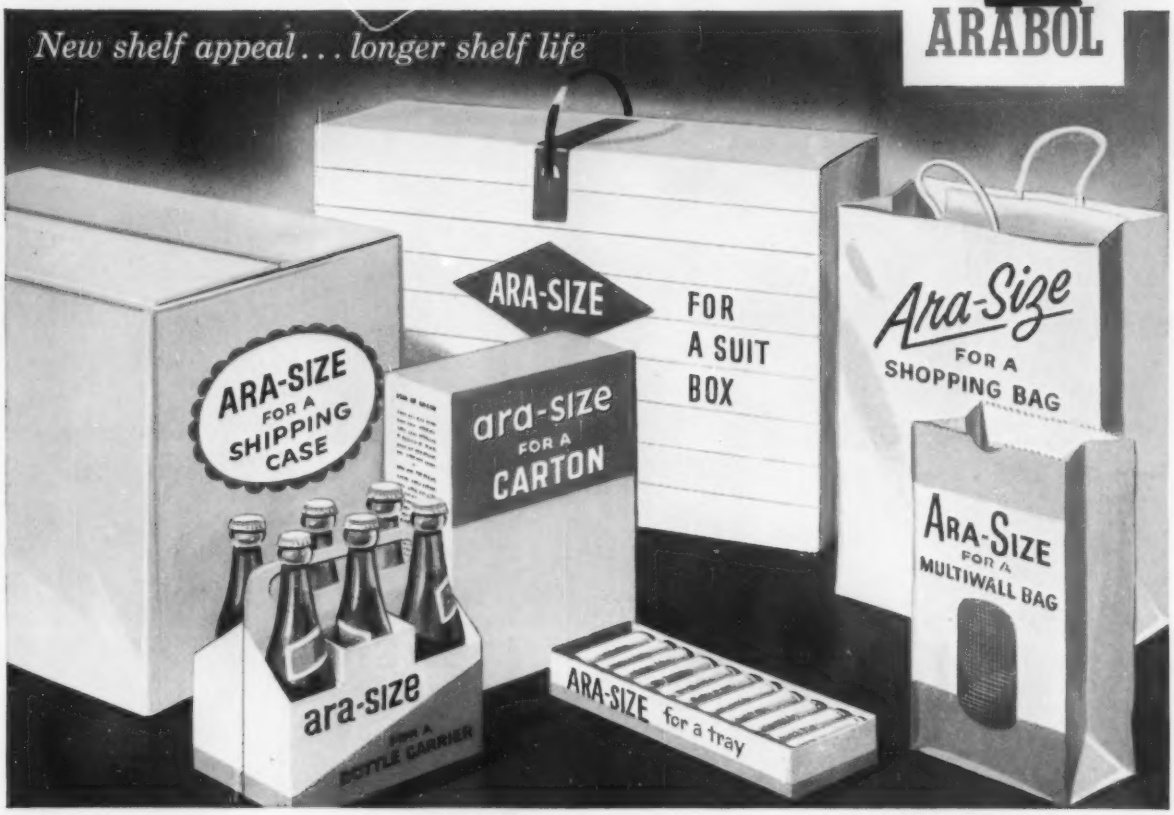
Package designs that combine sparkling, multi-color printing with polyethylene film's clarity open up new packaging and merchandising opportunities for you. Printed film is now being used for dry-cleaning garment bags, produce packaging, soft goods overwrap, dairy and meat packaging, laundered shirt packaging, and many special purpose applications where visibility, eye-catching color, and protection can be combined in a single package to give the product maximum sales appeal.

When you investigate the merchandising possibilities of printed polyethylene film for your packaging needs, ask your supplier about the special advantages of film made from U.S.I. PETROTHENE® polyethylene resins. In addition to excellent printability, these films offer greater clarity at a given strength (or greater strength with no loss in clarity). PETROTHENE-made films are available in a wide range of thicknesses, with a combination of special properties to meet your every packaging need. Your supplier will be happy to advise you about them.

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
99 Park Ave., New York 16, N.Y.
Branches in principal cities

Headquarters for SPECIFICATION ADHESIVES

ARABOL


New shelf appeal . . . longer shelf life
ARA-SIZE FOR A SUIT BOX
ARA-SIZE FOR A SHIPPING CASE
ara-size FOR A CARTON
Ara-Size FOR A SHOPPING BAG
ARA-SIZE FOR A MULTIWALL BAG
ara-size FOR A BOTTLE CARRIER
ARA-SIZE for a tray

FINER PRINTING . . . on any grade of paper or paperboard

For sharpness of printing—for gloss and brightness of color—Today's amazing new development is Ara-Size.

Ara-Size upgrades paper and paperboard by sealing the pores, giving a smooth "plastic" effect. This reduces the absorption of ink and prevents rub-off. The improved printability of the surface and the saving in ink are only two of the advantages gained.

The paper or board gains in density; the flow of air through the stock is greatly reduced. Scoring and bending are facilitated. Opacity can be increased or reduced. Ara-Size can be tinted in pastel colors.

Ara-Size is non-flammable, quick drying with minimum skinning. Gluability—with conventional adhesives—is unaffected.

Just as with ARABOL Adhesives—Ara-Size can be specification-formulated to each of your particular uses and application methods—by roller, knife-coating, flexographic and other methods. Ara-Size can be applied by the mill or the converter.

Ara-Size is particularly offered for bottle and can carriers, folding boxes, cartons, trays, suit boxes, shipping cases, single and multi-wall bags, shopping bags. Let us discuss the full details in terms of your uses. Write or phone any of the ARABOL plants and warehouses listed below.

GOVERNMENT SPECIFICATIONS ON ADHESIVES:
If you are working to Government Specifications, call on our long experience in service to the Military and other Government Agencies.

THE **ARABOL** MFG. CO.
a nationwide organization serving major users of industrial adhesives
EXECUTIVE OFFICES: 110 East 42nd Street, New York 17, N.Y.
CHICAGO • SAN FRANCISCO • LOS ANGELES • ST. LOUIS • ATLANTA
PHILADELPHIA • BOSTON • PORTLAND, Ore. • ITASCA and
McALLEN, Tex. • CINCINNATI • DENVER • TAMPA • LONDON, Eng.

74 YEARS OF PIONEERING IN THE MAKING OF ADHESIVES

It's the Ink that attracts...

GPI

IDENTIFY and BEAUTIFY with...

PRINTING INKS can give your product, package or promotion that all important jump on your competitors. And it's the kind of move that is sure to make them see *red,* while others are busy looking at what *you* want them to.

That's why it's so important to use the *right* printing inks — right in color, right in quality, right in cost, and right in performance. Inks that will do a good job both on the press and on the end product.

Let GPI help you attract and *hold* more customers with a complete line of inks for letterpress, lithographic, gravure or flexographic printing.

And, if you are particularly interested in *reds* — from Apple to Wine — we have them all. We'd be glad to make one especially for you. Why not give us a try — simply call or write:

GPI Sun

Branches in all principal cities

GENERAL PRINTING INK

DIVISION

Sun Chemical Corporation

750 Third Avenue, New York 17, N. Y.

DO YOU KNOW

how versatile the HUDSON-SHARP Campbell Wrapper really is?

FOR PRODUCTION VERSATILITY —

You can wrap and seal with the material of your choice — for the preservation you need and sales turn-over you expect, with a Campbell Wrapper. (1) It hermetically heat seals (including for gas flush) films and foils. (2) It heat seals other materials . . . including waxed papers. (3) It glues and/or crimp seals still other materials. Only the Campbell Wrapper does all three! In addition, you benefit from increased production because it automatically wraps single or multiple product packs—in rows, on edge, or stacked, at speeds up to 300 units per minute!

FOR DIVERSIFIED PRODUCTS —

Hard or soft — crisp, brittle or fragile . . . Whatever your product's consistency, it can be packaged on a Campbell Wrapper, without crush or breakage! Shape makes little difference either, for this machine wraps products that are square, oblong, round, oval, cylindrical, flat or irregular in shape. Campbell wrappers package a vast variety of products such as:— Crackers, Cookies and other bakery items; Candies and Ice Cream; Cheese, Bacon, Franks and Table-Ready Meats; Pharmaceutical supplies; Hardware parts; Textiles; Paper Products and 1001 varied items.

WRAPS WITH KRAFTS, GLASSINES, WAX PAPERS, FOILS, CELLOPHANE, POLYETHYLENE, PLIOFILM AND OTHER PLASTIC FILMS

FOR OPERATING ECONOMY —

Labor costs decrease with the Campbell Wrapper as in many cases it reduces help by 7 or 8 persons! Very often, one person to feed and one to pack is all that is necessary and no special skills are required. You effect important material savings, too, for this wrapper uses only the minimum necessary to cover the product and seals without costly oversize seam laps. Trays and stiffeners are not required unless desired for the package rigidity some products demand. All in all, there's less waste and fewer returns with products packaged on the Campbell Wrapper.

Write for new brochure just published

FMC Campbell WRAPPER

Putting Ideas to Work

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

FOOD MACHINERY AND CHEMICAL CORPORATION

FMC Packaging Machinery Division

Hudson-Sharp Machine Company

1201 MAIN STREET, GREEN BAY, WISCONSIN

PHOTOGRAPHY BY DICK BOYER

BERNARDIN closures keep good company!

Leadership rests not alone on product quality, but in surrounding and protecting that quality with accessories (like closures, for example) of precisely similar standards. Such, we like to feel is our case with the proud name of Schenley Distillers Incorporated, which produces V.S.R. 3 Feathers. *May our Closure Craftsmen work with you?*

SINCE 1881 · BERNARDIN BOTTLE CAP COMPANY, INC., EVANSVILLE, INDIANA

HERMETET... air-tight case for sales minded packages!

Hermetet, Diamond Gardner's hermetically-sealed lined carton is leak-proof, sift-proof, grease-proof and moisture-proof. Let's look at the evidence.

Exhibit A—On the night of June 14, this attractive Clairol powder bleach carton left the factory, destination unknown. Four weeks later it was picked up by the attractive witness (proof of sales appeal). When the carton was opened, there was no evidence of leakage. The contents were completely moisture-free. In fact, the special Hermetet liner had been folded down to reseal the contents—keeping them factory-fresh for weeks.

Hermetet is not guilty of leakage, sifting or moisture absorption. For additional evidence call or write Dept. 916, Middletown, Ohio. We have eye-witness reports testifying to Hermetet's sales power and excellence in both completely automatic and semi-automatic packaging operations.

The defense rests.

Persuasive Packaging

DIAMOND GARDNER CORPORATION

THE GARDNER DIVISION • MIDDLETOWN, OHIO

Plants in MIDDLETOWN and LOCKLAND, OHIO;
GARDNER-BROOKS Inc., SPRINGFIELD, MASS.

diamond gardner

DRY CARTONS • CARRIERS • BOXBOARD
PARAFFIN CARTONS • RETAIL CARTONS

At Eastman

QUALITY CONTROL

is a company's conscience "at work"

Tenite is more than a trade name for Eastman's plastics ...it's a pledge of promised performance

You can measure a company's conscience by the care taken to uphold the quality of its products.

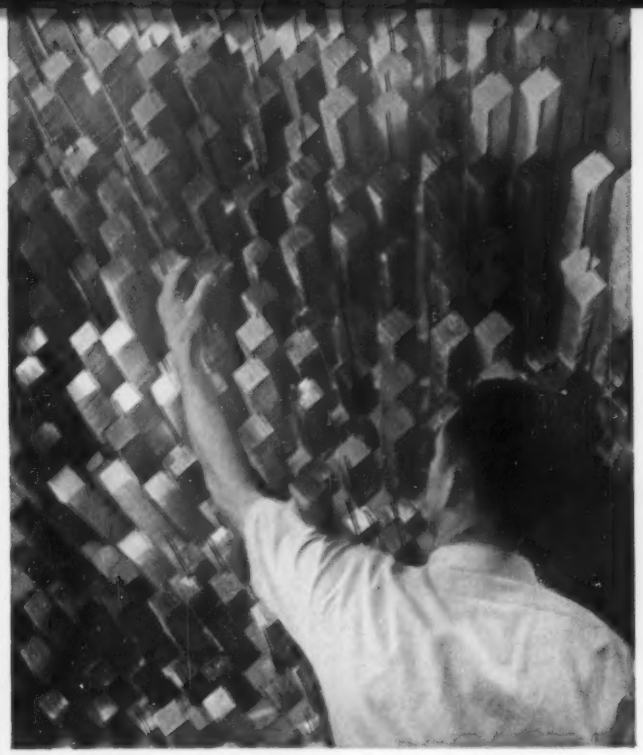
If those products are plastics, uncompromised control is a "must"...for plastics are unique materials. Perhaps no other class of raw materials used by the manufacturing industries has so many variable—yet controllable—physical properties. Flow or moldability, stiffness, heat resistance, weather durability, color, light transmission, hardness...are just a few of the properties that can be custom tailored to meet the needs of a specific application or a specific fabricating procedure. Such flexibility in setting the physical properties of a raw material is an advantage which must be protected by accurate control. For once an acceptable formulation has been created and sold to satisfy both performance and production demands, it is necessary to maintain those properties within extremely narrow limits to assure trouble-free molding operations as well as satisfactory service.

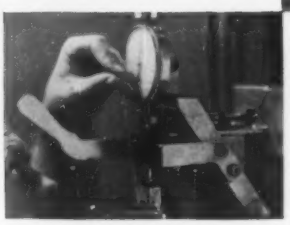
At Eastman, Tenite Quality Control is the vigilant watchdog over the production of all Tenite plastics. This group has the continuing responsibility to conduct all necessary testing to forestall deviation from the specifications set for the many formulations.

So varied and so complete is the testing done by Tenite Quality Control, that this one control section of Eastman requires a staff of over 100 trained personnel.

Acting as a nerve center, sensitive to any factor that could swing a formulation away from its prescribed limits, Quality Control approves or rejects the results in all phases of the production of every pound of Tenite plastic made.

Control of quality begins with approval of the basic raw materials. Even though most of the basic materials that go into Tenite plastics are supplied by other members of the Eastman industrial family, Tenite Quality Control has the final voice in the acceptance or rejection of these materials. At Kingsport, Tennessee, where Butyrate, Acetate and Propionate are made, raw materials such as cellulose esters, plasticizers, colorants and other additives are rigorously tested and graded on their suitability for compounding into clear transparent plastic or into transparent, translucent or opaque colored plastics. Indicative of the care taken to assure shipments of Tenite plastics that are right for each use, is the fact that no order for Tenite Butyrate, Tenite Acetate or Tenite Propionate is filled "out of stock." *Every*





order for these three plastics is made to order as a separate batch, custom-produced to meet the exact specifications requested.

At Longview, Texas, where Tenite Polyethylene in both low- and medium-density grades is produced via continuous processing, Quality Control maintains a constant check of the purity of the ethylene gas as it enters the reactors.

During production of both cellulosic and polyethylene plastics, various tests are conducted at intermediate stages to insure proper control of the chemical reaction. Similarly, after production, samples of the plastics are carefully molded by Quality Control to be sure their forming characteristics are suited to the customer's fabricating equipment. In addition, flow, color, along with physical and chemical stability are also checked. If any special qualities, such as fire retardance or resistance to ultra-violet have been specified, Quality Control runs extra tests on the plastic before shipment to confirm that these requirements have been met.

Color gets particular attention. Over the years, Tenite plastics have won an enviable reputation for accurate color matches. To date, plastics in more than 40,000 different colors and color effects have been produced by Eastman.

Finally, after Quality Control has been satisfied that the Tenite plastic will fully meet all specifications of the customer's order, it is approved for shipment. Even after shipment, Quality Control remains in the picture. Physical samples of all plastics shipped are kept for six months. In addition, all records on the processing of these shipments are retained for five years. Result: Quality Control has a continuing guide for filling subsequent orders with duplications of the original plastic.

Ever since Eastman began producing plastics in 1932, an alert awareness has existed that users of plastics have a critical need for material that is consistent in its performance and handling properties shipment after shipment. If one word were to be singled out to describe the outstanding virtue of Tenite plastics, it would have to be chosen from such adjectives as *uniform, consistent, unvarying, dependable.* But whatever the word, the end-result has been satisfaction for our customers... *and for us.*

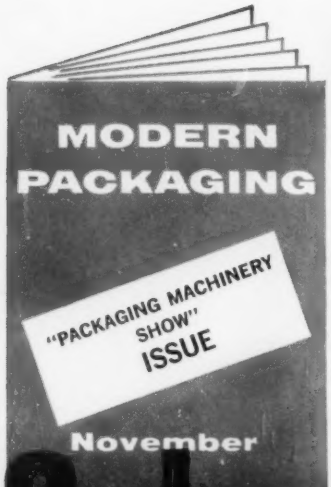
And, after all, that's the purpose of having a conscience.

The full story of the detailed testing that underwrites the reputation of Eastman plastics, is told in a 20-page booklet, "QUALITY CONTROL." For your free copy or more information on Tenite plastics, write EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

TENITE®

BUTYRATE · POLYETHYLENE · PROPIONATE · ACETATE

Dependable plastics by Eastman



To Packaging Suppliers and Advertising Agencies:

Special November Sales Opportunity

Facts about the PMMI Show...

● **The Packaging Machinery Manufacturers Institute Show** is sponsored by one of the packaging field's oldest and most influential trade organizations.

The '59 Show will be held in the New York Coliseum for four days, November 17-20. A new packaging event of national scope (the second PMMI Show was a smash success in Atlantic City in 1958), it aims to concentrate on the technical, mechanical and production phases of packaging as against merchandising aspects.

...about the Issue

● **The November issue** will carry a complete Exposition guide: floor plan, roster of exhibitors, schedule of all meetings and activities, feature articles and news keyed directly to readers' show-time interests; augmented coverage of new developments which suppliers regularly "time" for release to coincide with the Show.

...about the PMMI Show Audience

● **The businessmen** who visit such major national packaging events as those sponsored by the PMMI, American Management Association, and Packaging Institute, constitute screened groups of top-flight customers and prospects for suppliers of containers, packaging materials, and packaging equipment.

At *seven* of these major conventions since 1952, leading research organizations have conducted on-the-spot interviews with visitors. Their published findings (we will be glad to send you verbatim copies of each report) show that Modern Packaging is a consistent *first choice* among them—with greater *coverage*, greater *readership*, and greater *editorial value* than any of the other packaging publications mentioned.

Of particular interest to advertisers are the results disclosed by a study made at the 1958 Packaging Machinery Show by John T. Fosdick Associates, New York. *The study showed that in comparison with the second-place magazine, Modern Packaging had a better than 3-to-2 lead in coverage; a 2-to-1 edge in regular readership; and a 4-to-1 margin as the one "most useful" packaging periodical.*

...about PMMI "Show" Issue Advertising Values

● **Your advertising** in this issue serves *four* specialized functions that cannot be performed in regular issues:

(1) During the "pre-Show" period, the November issue ad helps stimulate interest in, and attendance at, the booths of exhibitors. (The issue is scheduled to be in the hands of its 32,000 packager-readers about two weeks *before* the Show it features.)

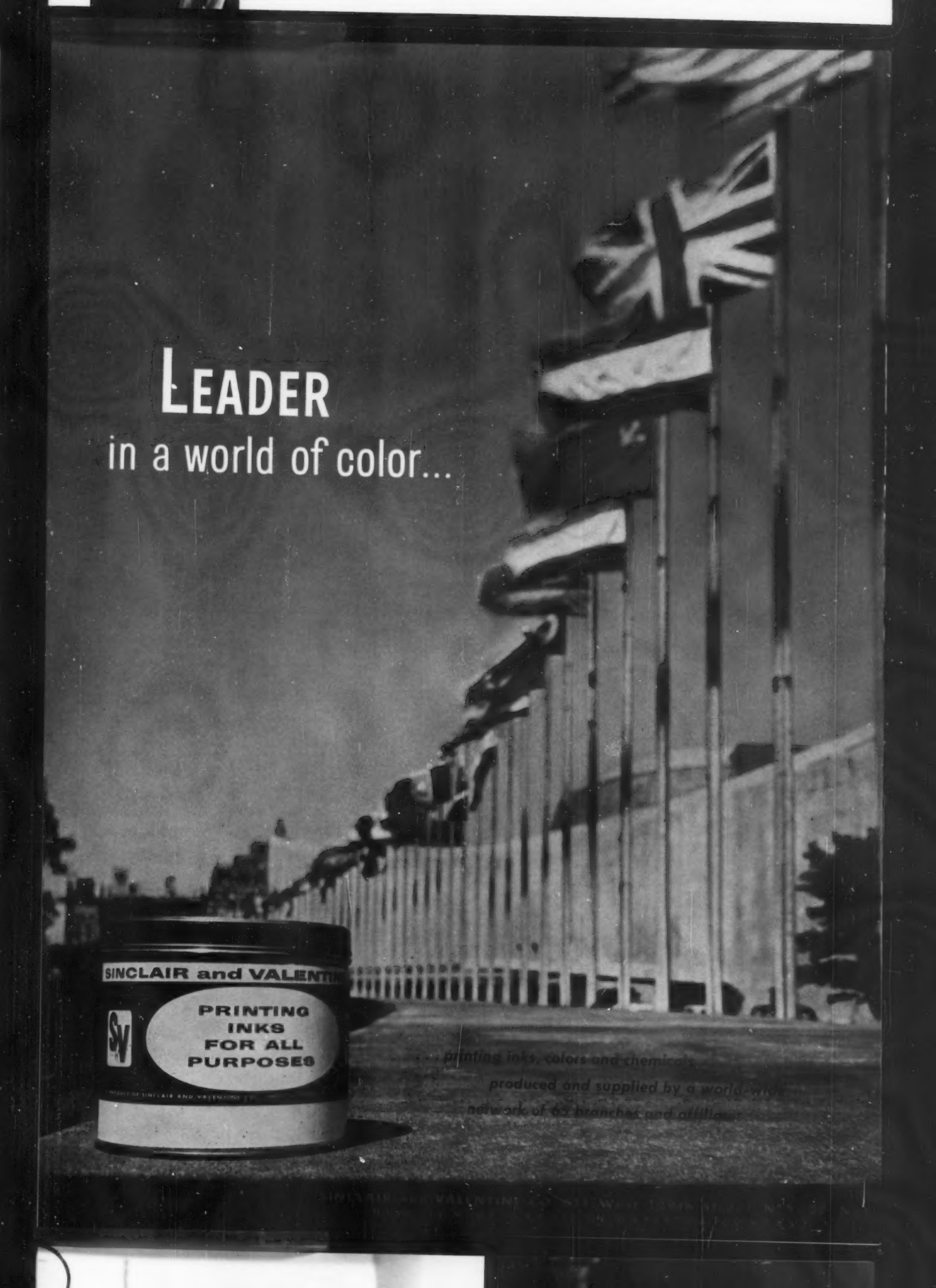
(2) During the "Show", this advertising gets further readership by packagers who use the "Show" issue to plan their Show-time activities.

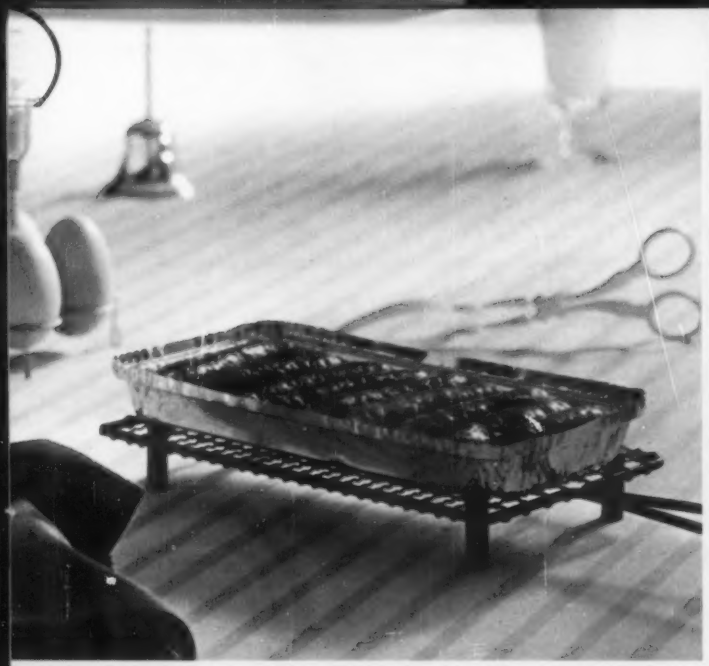
(3) Because the issue is literally an "Exposition in Print," it serves its readers as post-Show "exhibition booths"...as reminders of products that were actually on display. Advertisements by non-exhibitors enable such companies to vie with firms which were represented at the Show—and at a time when many buying decisions are being made.

(4) A significant extra value of "Show" issue advertising lies in its ability to reach the many packagers who are unable to attend the Show themselves.

...about Rates and Closing Dates

Copy requiring proofs for okay due September 23rd.
Complete plates due September 26th.
Regular advertising rates apply.


LEADER
in a world of color...
SINCLAIR and VALENTINE
SV
PRINTING
INKS
FOR ALL
PURPOSES
printing inks, colors and chemicals
produced and supplied by a world-wide
network of 65 branches and affiliates



IN FOIL CONTAINERS

it looks better! it serves better! it sells better!

It's a foil container's physical make-up that moves products. There's the sparkle—a foil container "reaches out" to catch the customer's eye. There's strength and versatility—a foil container serves as package, pan and serving dish.

And . . . because a foil container takes the store-to-stove-to-table trip in stride . . . there's no product transfer. As a result, food looks better and has greater appetite appeal when served.

It's a fact—The Plus Container creates preference. If you'd like more information, please refer to the reverse side of this page.

The Plus Container®

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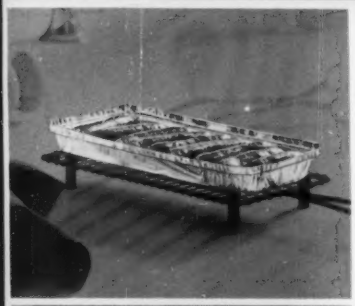

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World Report

Abstracts from foreign packaging magazines

ENGLAND

International Packaging Exhibition

September 8-18 are the dates for the International Packaging Exposition to be held in the Olympia Halls in London. According to the *Institute of Packaging Journal* (England), some 300 exhibitors have booked space for booths covering every category of packaging machinery and materials. The exhibition will occupy nearly 300,000 sq. ft. of space. Special displays will include entries in the "Eurostar" international packaging contest being organized by the European Packaging Federation. Twelve overseas countries are expected to be represented by approximately 30 foreign machinery manufacturers. Interpreter services, an overseas visitors' club and social activities including a Packaging Ball will supplement the ordinary business activities. The British Institute of Packaging will hold its convention simultaneously and the European Packaging Federation will hold its annual meeting during the period of the exposition.

GERMANY

Food law crisis in another quarter

Food laws apparently are becoming a worry in West Germany, too. This is revealed in editorial comment translated from the *Hamburger Abenblatt* (Germany). "Everybody concerned with food," the editorial states, "is looking ahead full of apprehension to the days before Christmas. On Dec. 22 the prohibition of foreign substances will come into force. Before that, many serious and curious difficulties have to be overcome. Until now, any addition to food is permitted if it is not expressly forbidden. In the future, it will be the other way round. Any foreign substance is forbidden if it is not expressly permitted. However, many things must be permitted again by official decree if we do not wish to renounce many things, such as the harmless carbonic acid in soda water or the application of water and steam for the manufacture of food. . . . . Chewing gum has been declared a foodstuff. It is not known whether diphenyl for preserving the skin of citrus fruit will be forbidden. Antibiotics are no longer permitted to be fed to animals in order to keep the meat fresh after slaughtering. Yet, for the breeding of animals they may be used. Where the breeding period ends and the slaughter period begins, even the experts of the food law do not yet know."

CANADA

Food-labeling regulations

Packagers are warned in an editorial in *Canadian Packaging* (Canada) that the Canadian Government is proposing sweeping changes in food-labeling regulations which will "cost industry millions of dollars in redesign costs and put the standards of surface design back at least 20 years." The regulations concern arrangement, type size, prominence to generic product name and such informative data as declared weight, contents and ingredients. In addition to cost, the editorial points out the upset to consumer recognition of packages that compliance with the regulation may bring about. It fears that a company which, through public confidence, gives prominence to its brand name rather than the common name, will find its design dominated by a contents declaration decreed at half the size of the brand logotype. Presumably any such regulations would apply also to packaged foodstuffs imported into Canada from the United States and other countries. The Food & Drug Directorate has asked for comments on its proposals from industry and the outcome has been a flood of protest letters. The result was the scheduling of an open forum by the Packaging Assn. of Canada at which the Directorate was asked to put forward its attitude and to clear up ambiguities. The editorial urges packagers against apathy. The Food & Drug Directorate's action, it states, will depend entirely upon packagers putting forward their cause with vigor.

SWEDEN

Automatic bottle-deposit refunding machine

The problem of refund for returned deposit bottles is being solved by an automatic machine that works something like a vending machine in reverse, according to SETT (Sweden). The shopper simply deposits the returns in a wall chute, which sets mechanism into motion to refund the proper coins or tokens. The machine reportedly can be arranged to handle 10 or more different bottle sizes and shapes and to pay the corresponding deposit value. It mainly consists of two or three bottle-collecting tables, placed on top of each other (the number of collecting tables depends on the number of different bottle sizes and deposit values). The empties are automatically sorted on the tables by a specially designed U-shaped chute. The staff of a store never has to touch the empties, as no crates for empties are required in the store. The entire collection operation is done mechanically in a behind-scenes operation.

ENGLAND

First clear H-D polyethylene film in England

Quantities of clear, transparent film made from high-density polyethylene produced for the first time in England and reportedly stiff enough to need no special overwrapping machinery is being made available for test purposes, according to *Packaging News* (England). The high clarity is owed mainly to a method of production that involves quenching in a water bath, the article states. The web of polymer is extruded downwards from a slot die and passed through a water bath immediately below the lips of the die. After the film has been drawn through the bath, which is kept at a controlled temperature, it is reeled off and slit to size. In stiffness and tear strengh (by Elmendorf rating), the new film is said to be comparable to cellulose film and on American experience its cost per 1,000 sq. in. should be about 10 to 35% less than those of moistureproof and saran-coated cellulose films of equivalent thickness. Its barrier characteristics against moisture, oils and gases are said to enable thin enough gauges to offer economical yields.

ITALY

New automatic wrapping and cartoning units

Two machines listed among 53 offered by an Italian machinery manufacturer are singled out for description in *Packaging News* (England).

One, reported to be the most advanced automatic wrapping machine of its kind in Europe and designed for bars of soap and solid articles of similar shape, applies one, two or three wraps and finishes the package with an outer band at speeds of 100 to 140 per minute. The wraps consist of glassine, a thin board stiffener and a third printed paper or foil lamination. The machine can be adapted to wrap from two reels with the outer wrap supplied from sheet stock, or may be built for three-reel feed.

The other machine takes six bath cubes, wraps each in

cellophane, forms a folding box around them, adds a cellophane overwrap and decorative outer band. The machine can be built to carry out all four packaging operations, not as a continuous sequence, but separately to meet the needs of manufacturers who require a variety of package styles. The machine, for example, provides an extremely tight and neat carton with overwrap for playing cards. Special feeds may be fitted for handling fragile items. The machine will apply either longitudinal or transverse tear strips. Speed is reported at 3,000 to 6,000 per hour.

ENGLAND

Polyethylene bread-wrapping units

Acceptance of polyethylene film for bread wrapping in England is indicated by announcements concerning wrapping machinery in *Packaging News* (England). One mentions a completely new unit designed to handle polyethylene film for bread wrapping at normal speeds. Not only have several of these already been installed, but more than 40 orders have been placed for a conversion unit produced by another machinery manufacturer.

FRANCE

Polyamide for food packaging

The potentials of the all-French polyamide material, Rilsan (see "World Report," MODERN PACKAGING, June, 1959, p. 83), as a food-packaging medium are discussed in *Emballages* (France), giving data on expected shelf life, characteristics of the material and recommendations on vacuum and inert-gas packaging. The article describes an actual installation set up for the packaging of sausages and sliced meat in this film. Operating from pre-made pouches and using vacuum-sealing equipment, the actual packing operation is facilitated by the use of loading plates on which the bags are presented to the vacuum sealer. This allows an operator, it is stated, to concentrate on the laying-on of the bags while another sees to the loading of the machine and its operation, thus giving a more efficient work cycle. The two vacuum-sealing machines in use on one packing line are reported to give a production of about 2,000 packages per hour.

ENGLAND

Impulse sealer for PVC, polyester and nylon films

A new impulse sealer for closing bags of polyethylene, polyester, nylon-type polyamide and PVC films, as well as coated papers, is being offered by an English machinery firm, according to *Packaging News* (England). If the user wants to make small quantities of bags with the same equipment, an attachment is available to carry a reel of tubular film. Reportedly, material up to 0.05 in.—two plies of 0.025-in. gauge—may be sealed. The standard model with 16-in. jaws is capable of 1,200 seals per hour. Three dials on the control panel set the welding temperature, heating and cooling time. The semi-automatic machine is foot-pedal operated.

SWITZERLAND

New aerosol pressure-filling system

A Swiss firm, which has spent years in developing aerosol-filling equipment for users who want their own in-plant system, announces a new combined filling and sealing machine that reportedly does away with the slow rate in pressure-filling systems. As described in *Packaging* (England), the problem has been solved in a simple way. The container already loaded with product is inserted under the propellant filling head with the valve device placed loosely on top of the aerosol body. Then a dome-like device provided with a rubber gasket descends and is pressed firmly against the shoulder of the container, forming an airtight chamber. In a second movement, the valve is lifted from the aerosol body by a suction device, leaving a wide orifice which gives access to the container. Automatically, a valve connected with the gas supply is opened and under high pressure the propellant is driven into the container from which, in the meantime, the air has been evacuated. In a final operation, the valve is again lowered onto the container and firmly crimped in position. All movements are performed in a fully automatic cycle and the container ready for use is then discharged from the machine. The new machine is designed for aerosols with a capacity up to 265 cc. per stroke (370 gm. propellant F 11/12 50:50). An output up to 4,000 aerosols per 8 hrs. may be obtained.

ENGLAND

Featherweight milk cans

The possibility of cans for the packaging of fresh milk instead of bottles is suggested in an article in *Tin-Printer and Box Maker* (England), describing a featherweight tinplate now available from a British strip mill for trial purposes. Such cans, it is stated, would, of course, be one-trip containers and almost certainly the cost over-all would be greater than the cost of returnable bottles. But it is pointed out that there could be compensating advantages in eliminating bottle-washing machinery and detergents. Also there would be less risk of contamination with a one-trip container. And it might be practical to carry out the canning of milk nearer the point of production than with bottles and to transport cans rather than the bulk tankers with milk in various stages of sterility, some better and some worse than others from the point of view of freshness. Thus the responsibility for pasteurization and packaging would move from the big city dairies to others located nearer to the area of the producers.

GERMANY

Predictions for 1969 packaging

German experts were asked to give their views of German packaging for 1969, which has been published in *Verpackungs Rundschau*. Here are some of the predictions: Nearly every commodity will be distributed in self-service stores, therefore packaged. Convenience foods such as cake mixes will have gained much ground and packaging applications of plastics will have won wide acceptance. Over-much Americanized packages will be accepted very slowly in Germany because of German preference for the traditional. However, the opening of trade barriers particularly with Italy, France and the UK may come as a shock to German manufacturers because, in general, goods from these countries are much better in appearance than those of German make, the article states. More attention will be paid, in particular, to improved convenience features for German packages.

THE NETHERLANDS

Committee on informative labeling

The "Nederlands Verpakkingscentrum" has a working committee called "Housewife and Packaging," according to *Packaging* (England). On the committee are leaders of Dutch women's organizations, who get together with industry to discuss packaging problems. One of the chief subjects is that of "Informative Labeling," covering the desirability of having all packages and containers for foodstuffs carry weight of contents, retail price, improved instruction for use, maximum permissible shelf life and other pertinent data. Discussion has concerned, among other items, such products as biscuits, cakes, canned meats, prepacked meats, detergents.

For additional information, write: World Report Editor, MODERN PACKAGING, 575 Madison Ave., New York 22.

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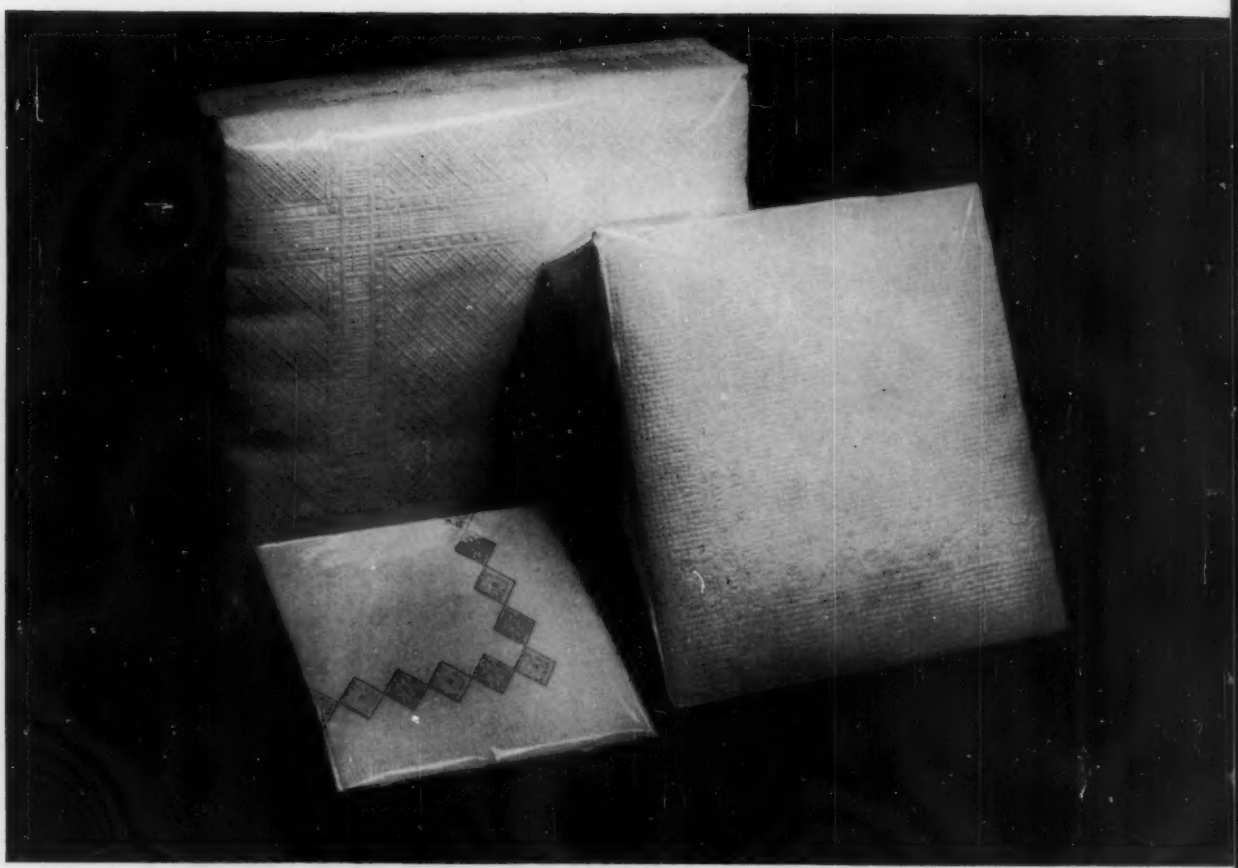

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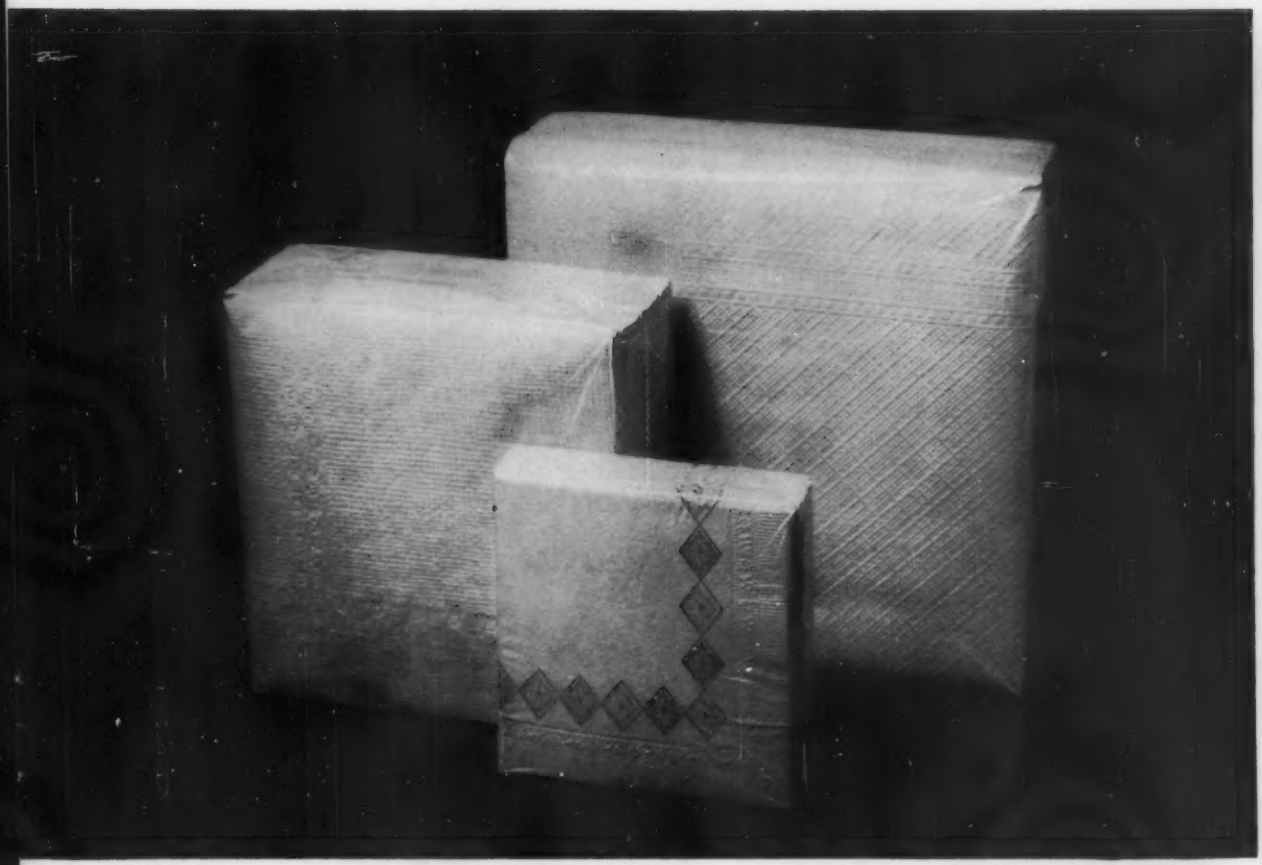

Spot the Cast Polyethylene?

Ludlow's new METAPLENE* cast-processed polyethylene is actually so clear and sparkling you can't tell it from cellophane.

That's METAPLENE† on the napkin packages at the right, and cellophane on those at the left. *But these look-alikes don't act alike!* METAPLENE has many important advantages over old-style packaging films. Lower cost for one. And longer shelf life!

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Editorial Memo

The American way

A booming economy such as we are now experiencing inevitably brings with it certain pressures and problems.

In the packaging field, there is pressure on machinery makers for new types of equipment to take advantage of technological advances in materials and containers. And there is the problem of satisfying cost-conscious buyers when machinery makers, like all of us, are caught once more in the inflationary spiral of materials, labor and services.

Buyers grumble over deliveries and prices, and exhibit increased interest in the offering of foreign machinery makers, who are, of course, anxious to capture a share of the American market.

In the face of these problems, what has our machinery industry been doing? Let's take a look:

Two years ago the need for automatic machinery to apply the newly economical plastic films was so pressing that it became the subject of a series of three articles in this magazine. Thanks to research and development work that was even then under way, you can now buy wrapping machines specially designed to handle polyethylene film—the most difficult of all—at speeds comparable to that long established for cellophane.

The need for high-speed handling of plastic bottles and tubes as these containers begin to compete in the low-cost mass market has been anticipated and met. A half-dozen makers are ready with unscramblers, line conveyors, fillers and cappers especially designed to handle the easily collapsed and unusually shaped plastic containers.

Machinery companies also are working with package suppliers in the development of new liquid-tight and hermetically sealed paper-base containers—a big field for future cost cutting.

In general, our machinery industry is attacking the cost problem with developments that help *save materials* (with roll-fed multipackers, end-loading case packers), *increase speeds* (a new spot labeler has been run at 2,500 per minute—faster than any known packaging operation) and *increase versatility* (with multiple sizes, variable speeds, quick change-over).

This is the American way—producing more at less cost per unit. You'll see the evidence at the Packaging Machinery Show in New York in November. Meanwhile, we have our editors out in the field rounding up every aspect of this new wave of machinery development and you'll see the result in our November issue in the most comprehensive article we have ever published on the subject.

The Editors

Modern Packaging, Executive and Editorial Offices, 575 Madison Avenue, New York 22, N. Y. Teletype: TWX-NY 1-3063. Cable address: "Breskinpub."

PAPER NEEDS THE TOUCH OF TALENT

Early German papers were hand made by depositing rag fibers evenly on wire mesh, a process requiring considerable skill.

But it took the talent of an Albrecht Durer to convert mere paper into masterpieces such as this priceless 16th Century woodcut.

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MODERN PACKAGING

September 1959 Vol. 33 No. 1

PHOTO FLUID CHEMICAL

It costs no more *to make retail price a part of the lithographed design of Ipana aerosol toothpaste cans as they come off the line. But the manufacturer is committed to a price level that he may find difficult to maintain.*

The price-marking problem

To what extent will manufacturer pre-pricing replace present costly methods of hand stamping a retail price on every package? This question today concerns packagers in hundreds of product fields

Writing or stamping the retail prices on a carton of toothpaste or a box of corn flakes seems a simple operation. But the fact is that today such marking takes 22% of all supermarket manhours and one cent out of every sales dollar—which in monetary terms is about two-thirds of the average net profit (1.46%) reported by members of the supermarket industry.

In department stores, where merchandise is more likely to be received pre-priced by the manufacturer, the average in-store marking cost is ⅘ths of 1% of total volume, according to the National Retail Merchants Assn.

The percentage for all types of retailing undoubtedly lies somewhere between. But whatever it is, the time-consuming operation of marking a price on every individual package—a fundamental of the self-service concept—is being given some close

Four pre-pricing techniques that retailers like

Paper neck label *on Coca-Cola six-pack relieves retailer of price marking if he accepts the suggested price—but it is removable or markable for a different price.*

scrutiny these days when stock boys earn as much as $2 an hour.

One obvious answer is to transfer price marking back to the manufacturer level, where, it is argued, the price can be printed directly on the package or applied by some other means before it leaves the factory as part of the production cycle—at little or no added cost.

This is a growing trend, as evidenced by Colgate-Palmolive's recent announcement that arrangements have been made for pre-pricing Colgate Dental Cream at the company's plants and that necessary plans are being made to pre-price other fast-moving Colgate products as a service to retailers.

Further convincing evidence that the trend is taking hold is the increasing number of factory pre-priced packages in all types of retail outlets.

The practice seems to be making most rapid headway among health and beauty aids, baked goods and confectionery, but it does not stop there. Packages in dozens of other product fields are already on the market with price marks unmistakably put there by the manufacturer: housewares, toys, electric-light bulbs, hair goods, hosiery, shoe polishes, soft drinks, smokers' supplies, candles, cocktail snacks, jewelry, ball-point pens, stationery supplies, hardware, sporting goods, infants' and children's wear, men's wear, women's lingerie and many others.

Competitive situations, frequent price changes,

Perforated tear-off label *permits price removal if item is purchased as a gift.*

Simulating the hand stamp *of the supermarket in package pre-printing is a practice adopted in many instances to create the psychological effect of bargain price which some merchandisers feel shoppers associate with the familiar violet-blue store stamp.*

geographical price variations and entrenched trade practices naturally impose serious limitations to universal adoption of this procedure. But the whole question is one that packagers in many fields are being called upon to evaluate carefully. For this reason a discussion pro and con, accompanied by descriptions of some pre-pricing techniques already adopted as part of the production-line operation, may be helpful.

Retailer pros and cons

Advantages cited in favor of the pre-pricing principle from the retailer's viewpoint may be summarized as follows:

- Eliminates the time and expense of putting prices on packages at the retail level.
- Speeds the shelf-stocking operation.
- Avoids losses through mismarking by incompetent retail help.
- Provides clear, legible, uniform marking.
- Reduces mistakes at check-out or cash desk.
- Should add little or nothing to manufacturers' costs, when price is incorporated in the package printing plates or added as an assembly-line applied label or ticket.

Among the most active proponents of factory pre-pricing are the variety chains, which list it as one of the chief requisites of an efficient variety-store package.* To be convinced that department stores welcome it for items of established price takes only one visit to a few stores to see the number of pre-priced packages in notion, soft-goods, toiletries, hosiery, toy, hardware, housewares and appliance departments. A check of self-service drug-store shelves reveals similar acceptance. But completely apart from the labor-saving aspects is the impetus given to the practice by cut-rate and discount merchandising.

*See "What's Happening to the 5 and 10?" Modern Packaging, June, 1959, p. 91.

Itemizing federal tax *in the total price of a product, as shown by the printing on this Toni package, speeds the check-out operation and also avoids possibility of errors.*

"Pre-pricing helps with price education," says a spokesman for a leading discount-house chain—which is merely to say that the discount saving is obvious when the "list" price is clearly stated on the package by the manufacturer. And whatever they may say in trade circles, most manufacturers are no longer fighting the discount houses.

A pre-printed price on the package gives the cut-rate retailer a welcome chance to "X" it out and (in non-price-fixed areas) to apply his own lower price for comparison. Or, the cut rater may leave the pre-price as is to substantiate the claim than an advertised bargain is "regularly" so much.

The rack merchandisers—a powerful force today in the merchandising of most non-food products—are definitely interested in factory pre-pricing as a means of cutting their overhead. According to a recent statement of the Packaging Committee of the Toiletry Merchandisers Assn., one-third of the total time of the rack jobber is spent in pricing.

And now, even though most food retailers, when asked, are vociferous in denouncing the principle of pre-pricing, there is considerable indication that supermarkets and grocery chains are beginning to demand it. One large Eastern supermarket chain, which estimates that price marking takes 1.7 cents of every sales dollar in its health and beauty-aid departments, reportedly is requesting pre-priced packages from all of its vendors in the toiletries field. From another retail source comes the wish that something could be done about pre-pricing frozen-food packages—reportedly the hardest items to mark in the store because of the frost that forms on the surface.

It is obvious that continuously fluctuating prices and competition in merchandising preclude any general or inflexible program of pre-pricing in the food or any other retail field. Apart from these economic forces, objections to factory pre-pricing are confused and contradictory. On the face of it, it would seem that there could be no objection from those areas, in some 30 states, where so-called "fair-trade" laws are still in force, since such laws require the retailer to charge no less for fair-traded items than the price specified by the manufacturer. Even in those states, however, some retailers say that they do not like to have prices pre-printed on the package. It would appear that such opposition stems from the desire either (a) to sell for less than the stated price or (b) to sell for more; in either case, a printed price might be embarrassing.

Some big-volume retailers have been able to set

Trend makes rapid headway *in health and beauty-aid departments, where dozens of manufacturer pre-priced packages may be picked up on today's self-selection shelves.*

their own price by specifying it to the manufacturer and requesting him to apply it. One variety chain reportedly supplies pre-priced, roll-type pressure-sensitive labels, printed with the chain's logotype, to the manufacturer, who affixes them by machine to the toy items he produces.

One objection to pre-printed price marks has an odd pyschological twist. It concerns the familiar violet-blue hand stamp widely used in supermarkets. Some merchandisers say that shoppers have become so accustomed to regarding this type of price mark as a symbol of advantageous price that they suspect they are not getting a bargain when the price is too obviously printed by the manufacturer. The basis of all cut-rate merchandising—the biggest trend in American merchandising in the last 15 years—is the consumer's conviction that he is getting the product for "less than list." Apparently there is such strong feeling on this point that some manufacturers have gone to great lengths to simulate the violet-blue hand stamp on the supermarket pre-priced packages.

Where pre-pricing does cause added expense to the manufacturer, he obviously must either absorb the expense or add it to his selling price. In the latter case, which is the more likely, the retailer pays it in the end. But retailers who are aware of this fact of life still believe that the manufacturer's expense will be less than theirs. If price of the item is stable enough so that it can be incorporated in the basic printing plates for package or label, there is really no added cost for anyone.

Trouble may come when sudden price fluctuations—particularly upward—result in serious loss of pre-printed packaging materials. A classic example is that of the light-bulb manufacturer who had to remove an old price and imprint a new, higher one on millions of bulbs in order to avoid selling at a loss. It's easy enough to re-mark for a *lower* price, but few merchandisers would be brave enough to remind a shopper that a price had been *raised*.

Manufacturers' viewpoints

Despite obstacles and problems, however, opinion in many quarters is that more pre-pricing on packages by manufacturers is inevitable. Leaders in toiletry and food industries report that retailers are asking for it and many are feeling their way with leading products of relatively well-established price. Others are market testing the procedure with a product leader.

The National Biscuit Co. reports that it is experimenting in test areas with a 25-cent package of vanilla wafers which carries the price printed on the transparent bag. Formerly the price marking was done by the deliveryman or salesman who stocked the displays. The new procedure is definitely a time and money saver, the company says, although

it is not without resistance from retailers who feel it encroaches on their right to establish price.

Bristol-Myers' new aerosol toothpaste, "Ipana Touch-n-Brush," is coming off the line with a deal price of 88 cents lithographed right on the can—a price which the company apparently feels is sufficiently attractive to be maintained for a reasonable length of time without printing change. Barbasol aerosols have a price lithographed on the can.

Lever Bros. incorporates a price for tooth brushes as a regular part of the label plate and the company pre-prints price on all consumer-deal offers and usually on new brands such as its Stripe toothpaste. This company believes the general trend is to more pre-pricing.

Except for deal offers such as may be seen on coffee, General Foods has not marketed pre-priced packages, but a company spokesman intimates that GF is studying the possibilities very seriously.

This even includes investigation of a suggested process for "printing" price by coating package surfaces with colorless light-sensitive dyes that could be converted to colored state by exposure to ultra-violet light through a stencil and either be subsequently fixed or converted back to colorless state by exposure to a longer wave-length of light. So far, this is only experimental, but if it could be developed successfully, it might offer a mass-production method of pricing in distribution centers with the advantage of making rapid changes.

Baked-goods departments *reveal pre-priced packages for almost every type of item, many with applied labels that allow for packager's price changes by a simple plate change. Other staple items carry price printed directly on film bag or carton.*

Pre-pricing methods

Incorporating price in the printing plate is, of course, the most widely accepted method—particularly where fair-trade pricing is still effective—and hundreds of examples of it may be seen on cartons, lithographed cans, labels, film bags, wraps and carded items.

When other techniques are demanded, they mean an added production expense and each manufacturer must develop a method most economical for the specific application. Removable price marks offer an obviously flexible system. Two principal reasons for removable price marks on a package are: (1) frequent price changes and (2) gift merchandising.

In the case of Pepsodent aerosol toothpaste, a completely flexible, hang-on price tag is insurance against the danger of having to scrap millions of pre-priced lithographed cans due to a sudden change in price. The price is given on a one-color-printed, die-cut paper label hand placed over the valve before the transparent guard cap is seated. If the retailer doesn't want the label, he can just pull it off. The label and its placement obviously represent an expense, but one which [*Continued on page 232*]

Confectionery and snacks *include many standard-priced items that can be pre-priced economically by direct printing of price on the package. An interesting sidelight is the prominence given to the now 10-cent standard price of Smith Brothers Cough Drops.*

Key to speed *is in two new 12-head rotary machines. Left, vacuum is pulled on cans before crimping to eliminate air; machine and crimping mandrels are actuated by hydraulic pressure. Right, pressure filler delivers volumetrically measured charge of high-pressure gas that is governed by adjustable stems (arrow) attached to pistons in cylindrical filling heads. White-circled area in photo below shows where these machines fit in over-all line.*

NEW ROTARY PRINCIPLE

Breaking the bottleneck at can-closing and pressure-filling stages, a non-refrigerated line gives Shulton record high speed at one-third the investment cost and higher output per manhour

FOR AEROSOLS

In the fast-moving aerosol field, the farthest step yet toward high-speed automation of the packaging line very likely is that taken by Shulton, Inc., at Clifton, N. J. This progressive toiletry house, which recently took over the Bridgeport Brass line of aerosol insecticides and the Good-Aire room deodorant, and built and equipped a separate plant for them, has devised a high-volume pressure-filling set-up that is at the same time flexible enough to handle a complete range of 5½-, 6-, 12- and 14-oz. sizes of aerosol cans.

After looking over all available equipment, Shulton put together a U-shaped non-refrigerated line incorporating the latest rotary machines and modified straight-line equipment which:

1. Is regularly filling, closing and pressurizing 120 cans per minute—nearly double the highest known speed for any single-line cold-fill operation.
2. Takes up less space than previous cold-packing installations and costs about the same as a single cold-fill line capable of half the output.
3. Reduces the need for attendants and thus achieves a sizable increase in output per manhour.

This is the first going installation in this country of the new principle of rotary machines for closing and pressure filling of aerosol cans.

Shulton has been operating the non-refrigerated line at an average speed of 120 cans per minute, although the new-type rotary crimper and pressure filler both have, according to the manufacturer of the machine, been test run at 160 per minute. The highest recorded production speed for any cold-fill line has been 140 per minute and that requires a duplex set-up of multiple-head, straight-line fillers.

At Shulton, the empty aerosol cans flow smoothly from an unscrambler over a bottom coder to a fast in-line filler on the first leg of the U-shaped line. Following a 90-deg. turn in the line, valves are inserted by hand and the cans then go in quick succession through the new-type rotary machines: first, a crimper which seals the valve unit in place, then the pressure filler which by an ingenious new system loads propellant in the desired amount.

After another 90-deg. line turn, cans enter the third leg, which is formed by a specially modified hot-water bath. In the final stretch, the cans are capped and cased.

Pressure filling has heretofore been regarded as slower than refrigerated filling of liquid propellant. On the Shulton line, the new rotary pressure filler breaks this bottleneck by eliminating intermittent mechanical action and utilizing 12 filling heads, mounted around the circumference of a turntable, to provide the time needed to index and to inject the pressure charge through the small valve in the top of the can.

A second contribution to speed-up is that the charge of low-boiling-point propellant (Freon-12) at this point has been minimized by pre-mixing a propellant with a higher boiling point (Freon-11) in the active product ingredients. Evaporation of the pre-mix propellant is retarded by a special manifold on the in-line filler that maintains a 7-lb. pressure on the concentrated mix up to the time of the filling operation.

No refrigeration is needed on the low-boiling pro-

Fast-paced new line *at Shulton moves cans from unscrambler (foreground) over bottom coder and through straight-line filler (left background) with special pressure manifold which holds high-boil propellant mixed with product. After 90-deg. turn in line, valves are hand inserted and cans move through two new rotary machines—crimp closer and final low-boil propellant filler at base of "U." Line then turns right through an improved hot-water test tank.*

Three can sizes *of insecticides and deodorants are filled on the line, which is operated at 120 a minute.*

Safe-and-sure inspection *is provided by this improved hot-water test tank, which runs at high temperature of 135-140 deg. F. Peaked hood has blast screen on one side, sliding laminated-glass windows on the other. Forced air through perforated pipe prevents windows from fogging.*

pellant to keep it liquid before pressure filling. Instead, hydraulic air-actuated pumps boost the propellant pressure to nearly 1,000 p.s.i. and force it into the filling heads. At each head, the gas fills an outer jacket, which surrounds a central cylinder containing the filling piston. Gas also flows into the central cylinder above and below the piston. The piston rises because of a differential in surface pressure, created by the piston rod. There is an adjustable stop nut which governs how high the piston can rise and thus accurately controls the volume of propellant charge in the cylinder.

When a can enters the rotary propellant pressure filler, the post-mounted pressure-filling head and adapter are lowered onto the can valve. This action controls an internal valve which opens the cylinder and closes off the outer jacket. The imbalance of pressure in the cylinder forces the volumetrically measured charge of propellant into the can.

Propellant loss with this system can, according to Shulton officials, be held to a minimum—much less than is the case with cold fill.

Almost as important to high-speed operation of this line is the new rotary 12-head crimper, which precedes the pressure filler. This unit has a separate hydraulic air-actuated pump, which operates the crimping mandrels located in the heads. Crimping action is initiated in each head by a piston, which drives a six-section expanding mandrel into the valve collar, firmly crimping it under the bead of the can.

A key action in this unit occurs, however, before the crimp. As the cans enter the machine, with valves in place, they are raised against the head and a 5- to 20-in. vacuum is pulled inside the can, according to the product. This flashes the high-boiling propellant in the product mix and flushes air from the can. Since the crimping operation is performed immediately thereafter, a partial vacuum is formed in the container which helps maintain speed in subsequent final loading of the container with the low-boiling propellant.

Interesting modifications have also been added to the standard hot-water bath to increase its efficiency and provide safer and more complete inspection for leakers.

A triangular hood covers the tank. One side of this cover is composed of wide-mesh screening, which serves to dissipate the force and contain fragments in the event a faulty can explodes. For utmost assurance, temperature is held at 135 to 140 deg., as against the ICC standard of 130 deg. F. The outer side of the cover, where the inspector stands, is made up of sliding windows constructed of laminated shatterproof glass. To prevent the windows from fogging, an air blast is directed against them from a 3-in. perforated pipe that runs the full length of the tank and is supplied by two blowers which are located over the intake and the exit sections of the unit.

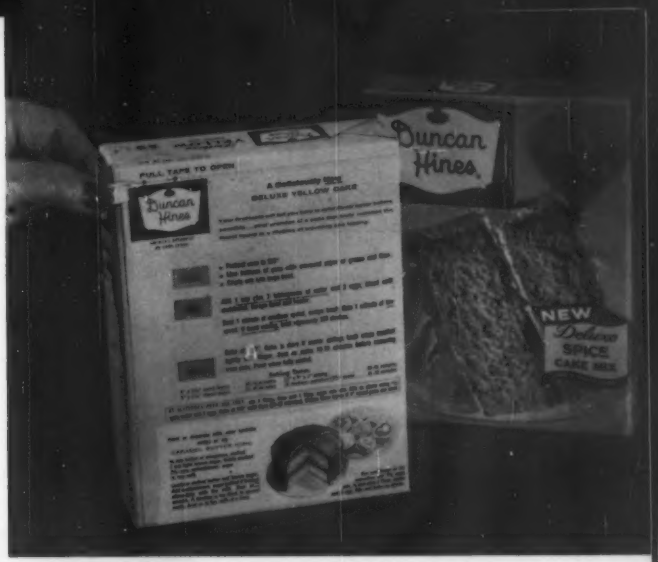
To insure an even test temperature throughout the water bath, a recirculating pump has been added to the tank that takes water from the top of the tank at one end and forces it in the bottom of the unit at the other end. To prevent product oils that leak from faulty cans into the bath from depositing on sound cans as they emerge, an overflow trough that is designed to remove these oils to a drain has been added to the unit.

With its versatility, high speed and wide adaptability to products and propellants, the Shulton system is believed to point the direction of future developments in high-volume aerosol production.

SUPPLIES AND SERVICES: Colton-Alpha rotary pressure filler, crimper and Colton-Hope product filler supplied by Arthur Colton Co., Detroit 7. Rotary unscrambler, rotary surge table, unitized belt conveyor and water bath by Island Equipment Corp., Miami 38, Fla.

Tear strip all the way

Two pull tabs, one of which uses a new principle to zip through polyethylene, do the whole job of opening new triple-ply package for Duncan Hines cake mixes



Two quick pulls *and cake mix is in the bowl. Cellophane tape under outer tight wrap makes complete tear around carton, freeing tuck-flap top (below). Strip of red polyethylene is welded to one side of polyethylene inner bag with thin bead seal; pulling this tears bag along seal line. Note (above) fine printing quality of thermoplastic-coated tight-wrap paper.*

Tear-strip opening convenience reaches the ultimate in new packages for Duncan Hines De Luxe cake mixes now appearing on the market. Both the outer, tight-wrapped carton and the inner polyethylene bag can be opened in a flash by pulling tear tapes.

Procter & Gamble, which produces the mixes, isn't talking about its innovations. But an examination of packages purchased in New York City discloses the following:

- A $\frac{1}{8}$-in. cellophane tear tape is incorporated in the thermoplastically sealed tight-wrap paper near the top, with a protruding tab and instructions at upper left of the back panel near the tab to "pull tape to open" along a dotted line.
- This frees the entire tuck-flap top of the carton, which has a convenient thumb notch.
- The inner polyethylene bag, a pouch-type construction, can then be removed, disclosing an added $\frac{1}{2}$-in. strip of red polyethylene running across the width of the bag about 1 in. below the top heat seal and protruding about $\frac{1}{4}$ in. beyond the edge of the bag at both sides. The red strip is attached along the entire bag width by a very thin line of heat sealing which welds it to the film on one side of the pouch only. When one free end of the red strip is pulled, the bag tears with it along this thin heat-seal line.

This is a new opening principle which should be of interest to every user of polyethylene bags, pouches and wraps. The difficulty of opening heat-sealed polyethylene film has been one of the biggest barriers to its wider use in packaging.

It appears obvious that the polyethylene package, with its longitudinal seam and top and bottom heat seals, is produced on a continuous pouch former-filler-sealer of familiar type and it is likely that the red tear-open strip is applied by a special heat-seal device which registers it on the web of film before the tube and bag are formed.

In a press kit given to New York food editors when the new Duncan Hines De Luxe cake mixes were announced recently, P & G said merely that the packaging represents "milestones and superiorities over other mix packages." It may be a milestone for polyethylene-film packaging as well.

Schrafft's goes to the supermarket

Famous restaurant chain adopts packages for new concession departments that reveal deliberate attempt to play down usual surface embellishments to tell a quality story

Ribbon device *in blue and red, combined with heraldic trademark in gold, identifies all packages—modified to distinguish various product groups. Side panels of frozen-food packages are color coded to facilitate warehousing and selection: red for meats, blue for poultry, green for fruits and vegetables, gold for meatless entrees. High gloss is achieved by the use of polyethylene side of laminated board as exterior printed surface—an accomplishment possible by development of inks that don't smudge or rub off.*

A radical departure from the usual full-color vignette and pictorial approach is seen in the ultra-conservative packaging currently being introduced in supermarkets by the Schrafft's restaurant chain of New York and New England.

On sale first in two Long Island Bohack stores (Manhasset and East Hills) and Safeway in Springfield, N. J., the packages are being offered in what is called "Schrafft's Quality Isle," a merchandising plan for concession-operated departments to expand the market for more than 200 food and candy items heretofore sold almost exclusively at retail counters in Schrafft's own restaurants.

The packages are an interesting example of a deliberate attempt to play down illustrative treatment. Appetite-appeal pictures, Schrafft's reasons, are unnecessary to sell Schrafft's quality, established by "more than 60 years experience and the approval of 60 million customers a year—the largest consumer panel in the world."

The design program represents a team effort by Schrafft's and a firm of independent designers commissioned to work right along as members of Schrafft's packaging committee on a continuing retainer basis.

The objective is to express quality entirely through the restrained use of solid-color elements in combination with large areas of white space. The basic theme is a ribbon motif in a special shade of blue and red, combined with the company's heraldic trademark symbol in gold, giving quick recognition to the entire line. The ribbon motif, however, is modified slightly to differentiate the various food lines: baked goods, frozen foods, pantry-shelf items (jams, jellies, etc.), prepared cooked items (salads, aspics, desserts) and candy and ice cream. To facilitate warehousing and distribution, as well as customer selection, a color-coding system has been adopted (with matched color samples for suppliers) for the frozen-food items: red side panels for meats, blue for poultry, gold for meatless entrees, green for vegetables.

No effort was spared to find packaging materials that would enhance the quality appearance. The high

gloss on cartons for the aluminum-tray-packed frozen-food items is achieved by putting the polyethylene side of protective extrusion-coated solid bleached sulphite board on the outside as the exterior printing surface, rather than inside as is customary. This departure from standard procedure, according to the designers, required the development of inks that would not smudge or rub off—an objective successfully accomplished through close cooperation with the ink supplier. Window openings on baked-goods cartons are provided, in many instances, on the sides of the cartons as well as on the top to eliminate inside shadows and to give a full view of icing-decorated cakes.

Schrafft's Quality Isle fixtures (gondolas, refrigerated cases, display signs, etc.) are all designed as part of the program, custom tailored to each store's area requirements. Contracted space ranges from 38 to 56 linear feet, with depths from 38 to 44 in. A Schrafft's-uniformed and trained attendant is in charge of each installation, which is stocked, of course, by company route men.

SUPPLIES AND SERVICES: Design program by Eron & Eron, Inc., Englewood, N. J. Cartons by Continental Folding Box Co., Ridgefield, N. J., using polyethylene extrusion-coated board by Lowe Paper Co., Ridgefield, N. J., and inks developed by Interchemical Corp., Printing Ink Div., 67 W. 44 St., New York 36.

Window openings *for baked-goods cartons are provided on side as well as on top in many cases to give full view of icing decoration on cakes. Note change in ribbon arrangement to identify baked goods.*

Special fixturing *and store signs complement the package design and are custom tailored to each store's area requirements. Contracted space for Schrafft's Quality Isle layouts ranges from 38 to 56 linear feet, with depths of from 38 to 44 inches.*

The old in the new

The oldest of H. J. Heinz Co.'s famous "57 Varieties" is now packaged in a modernized, more convenient cylindrical glass jar whose paper-label design suggests the historical primacy of the product. Dominant feature of the new label is the product name, hand lettered in a style reminiscent of a 19th-century handbill.

The founder of the Heinz firm began his business career 90 years ago by selling glass-packaged horse radish house-to-house. In 1887, the product was offered in dehydrated form, packed in an octagonal glass jar. This same basic package, with die-cut keystone label, was used through the following years with relatively minor changes.

The new glass jar is shorter than its predecessor. It has a wider mouth, for user convenience in spooning out the product, and an easy-to-open, crimson urea screw closure. According to the packager, the container's cylindrical shape and its label design facilitate store display while increasing shelf appeal. *Jar by Brockway Glass, Brockway, Pa. Label by Fuller Label & Box Div., Standard Packaging, 500 Dargan St., Pittsburgh 24. Cap by Owens-Illinois, Toledo 1.*

IDEAS

Cartons keep cold beer cold

Aluminum foil's property of cold retention is being put to work by a New England brewer to add a sales-making dimension of consumer convenience to six-pack carry cartons and 24-pack cases of canned beer. Both corrugated-board packages are laminated on the outside with 0.00035-in. foil which reportedly keeps the product refreshingly cold for 6 hrs. after it is removed from the refrigerator.

The brewer, Haffenreffer & Co., Boston, points out that the protective, foil-lined cartons are ideal for carrying on picnics, boat trips and other summertime excursions. They provide excellent short-term temperature control without the use of ice.

Consumers pay no premium for the new beer carton, Haffenreffer says. In addition to its primary function, the 24-can case also can be re-used as an "iceless icebox." It has a built-in carry handle that lays flat during shipping and storage, but can be set up in a few seconds.

Carton design gives prominent mention to the packages' cold-retention feature. *Cartons by Stone Container, 4200 W. 42 Pl., Chicago 32, using Alcoa foil for the exterior lining.*

Constructed for quality

An unusual idea in luxury packaging is suggested by an elegant rigid box of folding and glued construction, with ingenious interior compartments, being used by a Swedish firm, Marabou, for Allehanda chocolates. The box combines the use of foil-laminated board for the base and interior elements with high-gloss coated board for the hinged cover.

Design elements on the hinged layflat cover are printed in red, gold and green on white. Realistic color reproductions of the chocolates appear on the gold-colored foil undersurface of the cellophane-overwrapped box.

The accompanying illustration indicates the interesting interior construction. After front and back tray panels have been folded over and glued, paperboard stiffeners are inserted under side-panel flaps, which are folded down. A glossy paperboard base sheet is then placed in the bottom. The final step before filling is insertion of the gold and brown, foil-laminated paperboard partition units. They are die cut and scored, with tabs that lock securely into slots pre-cut in the bottom of the inner panels. *Box by AB Akerlund & Rausing, Lund, Sweden.*

IN ACTION

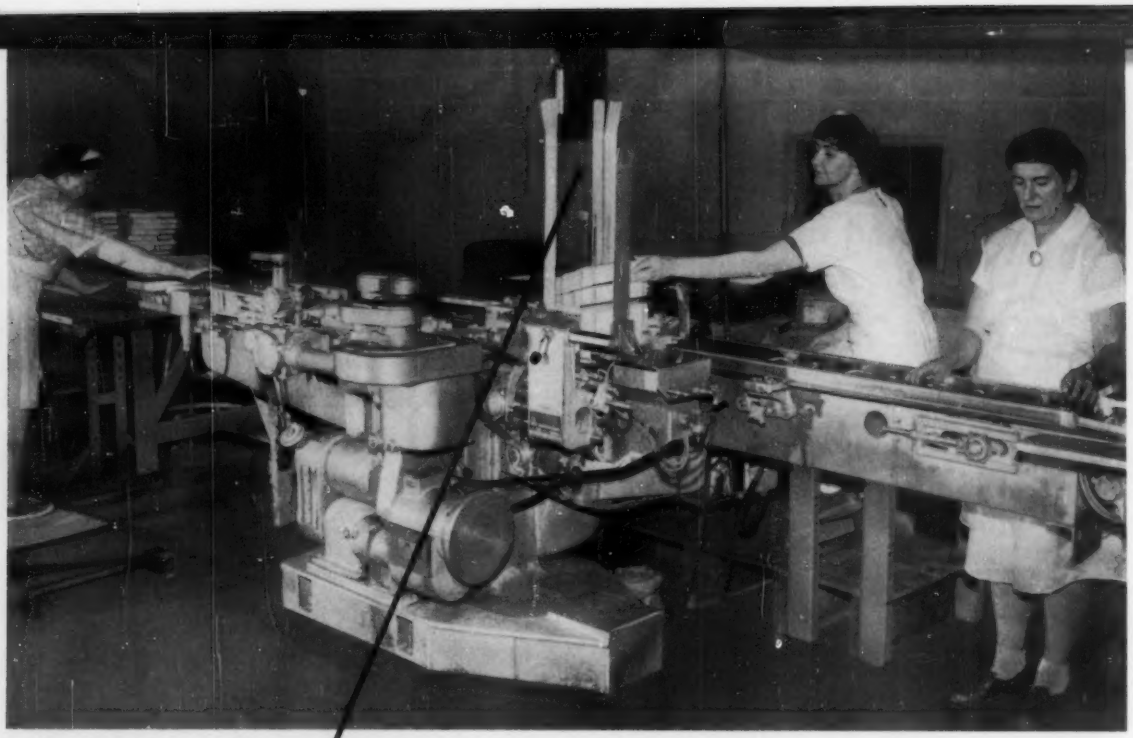
Toward stronger identity

In a bid for stronger brand identity and shelf impact, Du Pont has adopted a completely new package design for its "7" line of automotive specialties. A total of 44 products in fibre and metal cans is involved.

The new package design was evolved, Du Pont says, from a careful research and planning program whose aim was to make it flexible enough to be adapted to all container sizes and shapes. First package to display the new design is the metal can for Shield, a new addition to the "7" line.

A basic element in the design is a swirl of white (which the packager calls a "jet stream") that loops the logo and continues around the container's sides. This dramatic device for spotlighting the company name serves a dual purpose. When cans are arranged side by side on dealer shelves, the swirl ends meet to create a compelling, unified pattern.

The packager's "7" trademark, which "floated" in the former container design, is now integrated with a band of silhouetted automobiles that runs completely around the bottom of the can. *Redesign by Mel Richman Design Associates, 2009 Chestnut St., Philadelphia 3.*



New integrated machine *is only 12 ft. long. Product moves in from right. Cartons are set up from machine (center) on demand and closed (left) after pan or tray has been smoothly inserted horizontally. The change-over between two cartons of different size and shape takes only minutes.*

Quick change cartoner

Birds Eye gets unusual flexibility in a new, compact machine that automatically sets up, loads and closes both trayed and panned products at 27% and 20% higher line speeds

Flexibility in high-speed cartoning, which should be of interest to many volume packers of frozen specialty foods and other solid food products, has been developed at Birds Eye's Waseca, Minn., plant in a new, compact, horizontal, cam-action machine. The machine measures only 12 ft. in length, yet combines fully adjustable carton set-up, loading and closing components in a single, integrated unit.

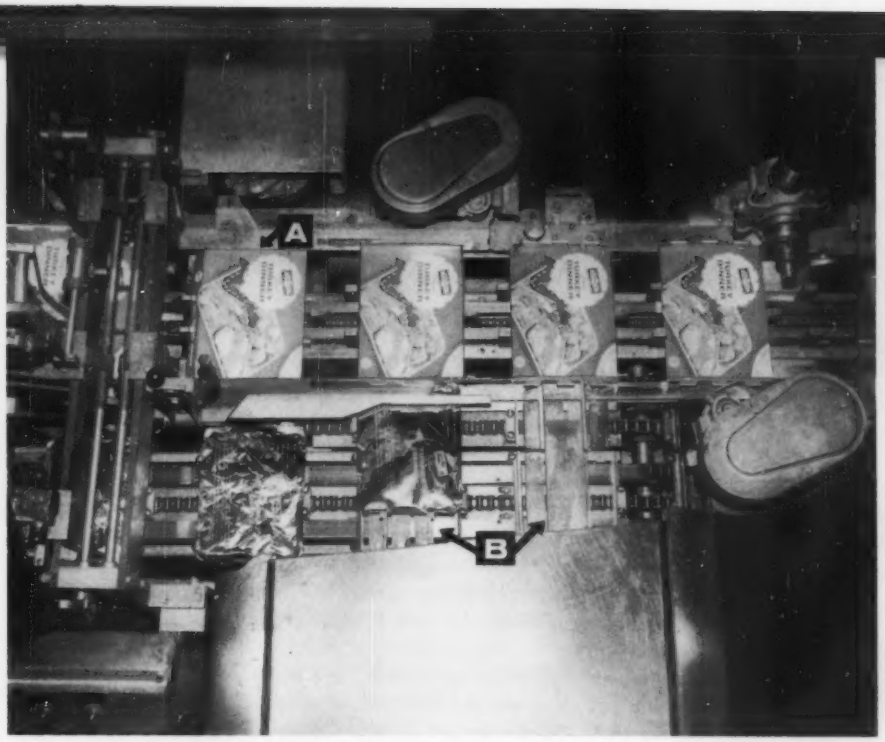
For Birds Eye, the machine automatically applies outer, waxed, lock-tab cartons to two frozen products of entirely different shape and size—turkey and beef dinners in aluminum trays and two-portion entree foods in foil pans. Here, the machine easily handles an increased line output of 27% in dinners and 20% in entree items.

The cartoning machine, which replaces a former semi-automatic operation involving the use of several machines, is said to have a design potential of 350 cartons per minute.

Other new features reported for this unit are: (1) smooth and positive carton set-up action, (2) automatic product feed, (3) accurate and positive locking of carton tabs and (4) swift change-over between carton sizes in a matter of minutes.

Adjusted for different packages entirely with hand wheels or quick-change parts, the cartoner will handle packages up to 3 in. deep, 10½ in. wide and 14 in. long—encompassing a range of carton sizes from about 19 to 441 cu. in. in capacity. Because of this flexibility and its simple, sanitary construction, the machine appears to be adaptable to a wide range of frozen foods, pies and other similar food products.

In the machine operation, knocked-down cartons



Looking downward *into machine loading trayed frozen dinners. Cartons are pulled down by vacuum fingers and set up at "A." Foil-hooded aluminum trays are pushed into package by continuous-motion, cam-actuated rams (as at "B") at 75 units a minute. Note lugs that grip leading and trailing edges of both cartons and trays to control position of these packaging components at high speeds.*

Two packages, *of different size and shape, are loaded alternately after minor machine adjustments. Panned entrees are in overwrapped cartons; the trayed dinners, in printed cartons.*

are placed in a feed magazine, which is fully adjustable by hand wheels for length, width and thickness of the carton. However, these adjustments do not change the position of the trailing edges of the carton—thus eliminating any need for moving the vacuum cup pick-up arm during machine change-over. The vacuum arm pulls cartons down into a carton conveyor, where a spear is inserted in each moving carton to assist in breaking these packages accurately on the scored lines. Flaps are opened on the loading side of the carton and closed on the opposite side with a series of conventional fingers and stationary plows.

Positive control of the carton during loading is assured by three roller chains, which carry the paperboard package through the machine. Lugs on the outer two chains contact the trailing edge of the carton. The lug on the center chain, which is readily adjustable, contacts the leading edge of the carton and completes the pocket in which the carton is moved through the machine.

At Birds Eye, tray- or pan-packaged products enter the machine on a second, parallel conveyor which is also composed of three roller chains equipped with lugs. On this conveyor, the two outer chains are connected with [*Continued on page 227*]

SUPPLIES AND SERVICES: "Marapak HU" cartoner manufactured by Food Machinery & Chemical's Canning Machinery Div., San Jose 8, Calif., for American Can's Marathon Div., Menasha, Wis. Cartons by Marathon.

Changed over *to entrees with a few simple adjustments, the machine handles the foil-panned, crimped-lidded product (right rear) at 90 per minute. Lock-tab cartons are closed by zipper-type plows (left center), assisted by heated shoes that soften cartonboard and insure more positive closure.*

THE THERMOFORM

The blister and skin pack arrived suddenly as a packaging form, based on techniques in the drawing of plastics that go back many years

GREAT PACKAGING DISCOVERIES—8

The idea of using transparent plastic sheet and film as a "blister" or "skin" to enclose the product and attach it to a simple merchandising card burst upon the packaging field as a sudden new discovery around 1952. Yet the principle involved goes back more than 20 years and contributions to this *Great Packaging Discovery* came from so many different sources that it is impossible to single out any specific one.

Suffice to say that thermoforming (as it is now called) has in seven short years risen to rank as a packaging form along with such postwar greats as the squeeze bottle and the aerosol.

Roots of the idea stem back to 1938, when a New York firm, Design Center, was asked by the Lederle Co. to produce a new type of plastic-domed counter merchandiser for bottles of Vi-Delta vitamins. Design Center at that time was headed by Louis H. Pfohl (now head of Plaxall, Inc.), who recalls that he and his staff were compelled in desperation to learn how to form plastic sheet. A thousand dollars had been spent in obtaining a die from an outside firm. The die was wrong. A second $1,000 was invested and again the plastic sheet wrinkled, thinned out and became unmanageable.

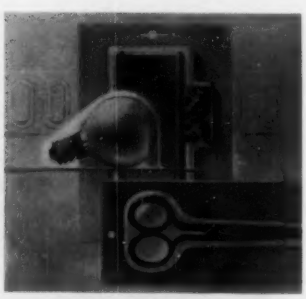
Faced with failure and a financial loss that would have been disastrous, Pfohl and his assistants made their own die. Then they obtained the largest arbor press they could find and determined to experiment with plastic sheet until they had its perverse behavior tamed.

The cast acetate sheets were heated and softened on a steel plate mounted on a kitchen gas burner. A simple timer helped the operator regulate the heating period. Then the sheet of softened acetate held in a clamping frame was quickly transferred by hand to the press. A 225-lb. operator literally jumped on the foot lever of the press, pushing the die into the plastic sheet and forming the dome. After many trials, a successful technique was developed and 25,000 of the displays for packaged vitamins were produced.

Crude as these methods were, they showed the way, so that by 1942 Pfohl could produce a fairly advanced blister-type display package for Becton, Dickinson thermometers and shortly thereafter a true blister dome locked into a die-cut card—thereby heralding the millions of different types of carded thermoform packages that have since followed.

Among other contributors to the development was Plastic Artisans, one of whose principals, Earl Middleton, was associated with Design Center in some of the early advances mentioned above and who pioneered sliding plastic domes and other innovations. Also, there was the important work of Borkland Laboratories, whose sheet-forming process was licensed to various converters as early as 1947.

The early "blisters," it should be noted, were formed by mechanical pressure—not by vacuum. The use of vacuum or atmospheric pressure first became important in the production of three-dimensional maps. Investigations were actively conducted by the Army Map Service during the period 1946 to 1950 and were a continuation of pioneering work done in the early 1930s by J. J. Braund of the Coast & Geodetic Survey.



THIS MONTH'S COVER

In 1950, E Bowman Stratton, Jr., then chief of the Materials Development Section, Relief Map Div., Army Map Service (now president of the Auto-Vac Co.), reported on the progress made in vacuum forming relief maps from pre-printed sheets of 0.015-in. vinyl sheet. The equipment employed included a radiant heating unit, a clamping frame to hold the sheet, a vacuum pump and plaster dies.

Stratton suggested that one of the promising non-military applications would be the forming of packages and container components, and in the years to follow he was identified with, and was frequently responsible for, some of the major forward steps that thermoforming was to make in the packaging field—including skin packaging and the development of many types of vacuum-forming machines ranging from simple to high-speed roll-fed models.

One of the first package makers to sense the potential in the new method was C. Knowlton Shaw, Jr., of the Shaw-Randall Co., an acetate box maker. Early in 1952, his firm produced vacuum-formed blister packages for Reflexite Corp.'s house numbers and for William Prymm Co.'s line of notions. These specific packaging applications, reported in MODERN PACKAGING, gave great impetus to the trend.

Additional developments came thick and fast. Kraft Foods introduced formed vinyl packages, machine produced and mechanically filled and sealed, for individual portions of jellies. The United States Rubber Co. devised an all-plastic blister sphere for golf balls. Master Rule adopted skin packs using the product as the die. Merit Displays demonstrated that vacuum forming could employ multiple cavities and large sheets in much the same way that gang runs of labels are handled on a printing press.

Materialwise, credit must be given to the Eastman Kodak Co. and other plastic-sheet producers, who early foresaw the possibilities of this new package form and worked with converters to perfect methods and machinery. Later, success was spurred by Celanese Corp.'s development of an improved lower-cost extruded acetate sheet and there has been an ever-widening wave of materials developments involving butyrate, polystyrene, vinyl, polyethylene, polyester, oriented polystyrene, polypropylene, laminations and flocked sheet.

Machinery, too, has taken great strides in the last two years.* Automatic machines operating at speeds up to 1,000 packages a minute are now being used. Forming, filling and sealing in a continuous, integrated operation is today a practical reality.

Ingenious card-fastening techniques in 50 or more variations have been contributed by inventive packagers. The merchandising of many different types of goods including plumbing supplies, hardware, notions and a vast miscellany of toys, tools and industrial parts has been radically changed.

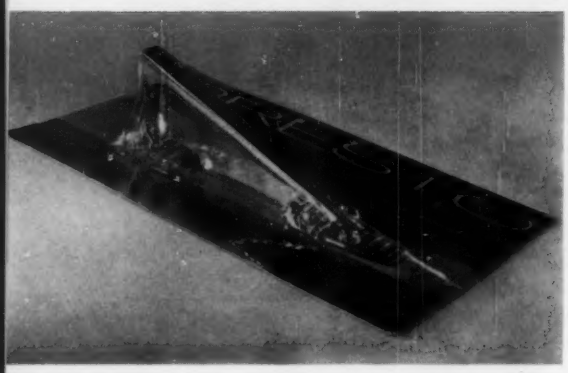
The revolution that began with the first discoveries in pressure-forming displays and in vacuum-forming military maps has spread throughout the packaging field. Last year, thermoformed plastic packaging consumed an estimated 15 million pounds of plastic sheet and film, incorporated in at least 3 billion individual packages.

* See "Versatility in a Blister Machine," p. 130, this issue.

Louis H. Pfohl
an originator of pressure forming

E. Bowman Stratton, Jr.,
developed vacuum-forming equipment

C. Knowlton Shaw, Jr.,
pioneered blister packages



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6

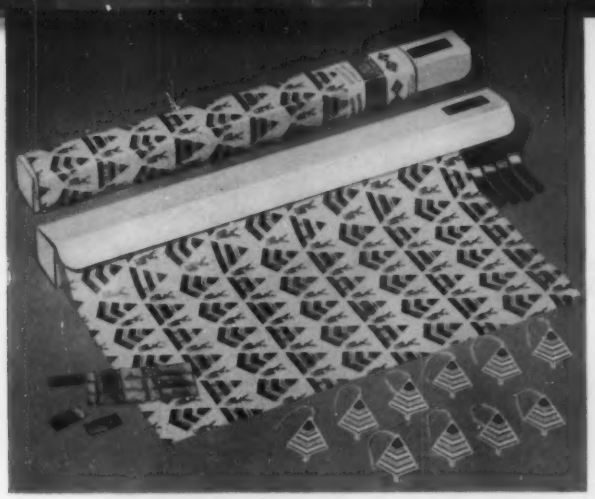
PACKAGING PAGEANT

1

1 A tight cellophane-film overwrap keeps the edible sugar decorations dust free and sanitary in Cypress Novelty Corp.'s multi-purpose cake-decoration kit—a single assortment that can be used for birthdays, anniversaries, stork showers, Valentine's Day and Easter. The transparent wrap also provides product visibility for this impulse item, sold in supermarkets, chain and variety stores. Cellophane (300 MS-4), American Viscose Film Div., Philadelphia.

2 An "Oscar for Packaging 1959" went to E. Maggiora's Panfrutto color-appealing carry carton at the recent 9th Italian National Packaging Congress. Cited for originality of design, practicality of manufacture and good use of old and new materials, this cake package was displayed along with the 14 other "Oscar" prize winners at the 8th Packaging Exhibition in Padua. Container, Bugnane Imballaggi, Leumann-Torino, Italy.

3 Skin packaging with cast vinyl film reportedly has reduced selling costs and upped sales of Presto Lock Co.'s Marine Products Div. line of marine hardware due to impulse buying encouraged by



7

BEFORE

8

AFTER

9

getting these items out front for self-service merchandising. Adhesion of the plastic to the backing board is said to be excellent and deep draw presents no problem. Consumer removal is easy. Krene cast vinyl film, Union Carbide Plastics Co., New York.

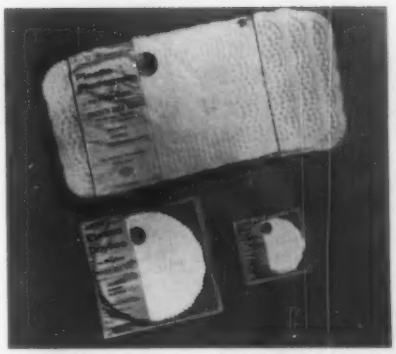
4 A new dispenser fitment—a combination plastic nozzle and captive cap—is being introduced on Ronson Fire-Starter Igniting Fuel cans. Use of this pint-size F-style can and new cap fitting reportedly can reduce total container cost by as much as $6 per thousand in comparison with standard F-style cans, 1-in. metal screw nozzle, cap and inner seal. Cans are delivered with perforated top opening. After filling, the nozzle is mechanically clinched in position. Can and fitment, Continental Can, New York.

5 Easier handling is the objective of this large 3-lb., 5-oz. round glass container for the Bama Co.'s peanut butter with molded-in pattern of squares. A metal screw cap and spot paper label complete the package. Glass, Brockway Glass, Brockway, Pa. Cap, Crown Cork & Seal, Philadelphia, Label, U. S. Printing & Litho, Cincinnati.

6 A new line of cake mixes in 9-oz. cartons—about half the regular 1-lb., 3-oz. size—has been introduced by Topco Associates under its top-quality Food Club label for distribution through its 29 member supermarket chains. The smaller package is better suited for small families and special promotions. The 9-oz. package produces a single-layer cake; the standard one, a two-layer cake. Carton, Warner Bros.' Box Div., Bridgeport, Conn.

7 A convenient cutter box for Christmas wrappings has been announced by the Tie-Tie Gift Wrappings Div. of Chicago Printed String Co. Called "Color-Matched Ensemble," the kit holds 26 ft. of decorative gift paper, 60 ft. of matching ribbon, 10 tags and 12 pressure-sensitive seals. Box, Wolverine Carton Co., Grand Rapids, Mich.

8 Impressive sales increases have been chalked up for Goldenberg Candy Co.'s Parti-Pak carton of Peanut Chews since the introduction of a new full-color, rotogravure-printed cellophane overwrap. The company attributes this sales jump entirely to the package, whose appetite-appealing illustration identifies contents with a full-color reproduction of the company's well-established candy bar of the same name. Wrap, Milprint, Milwaukee.

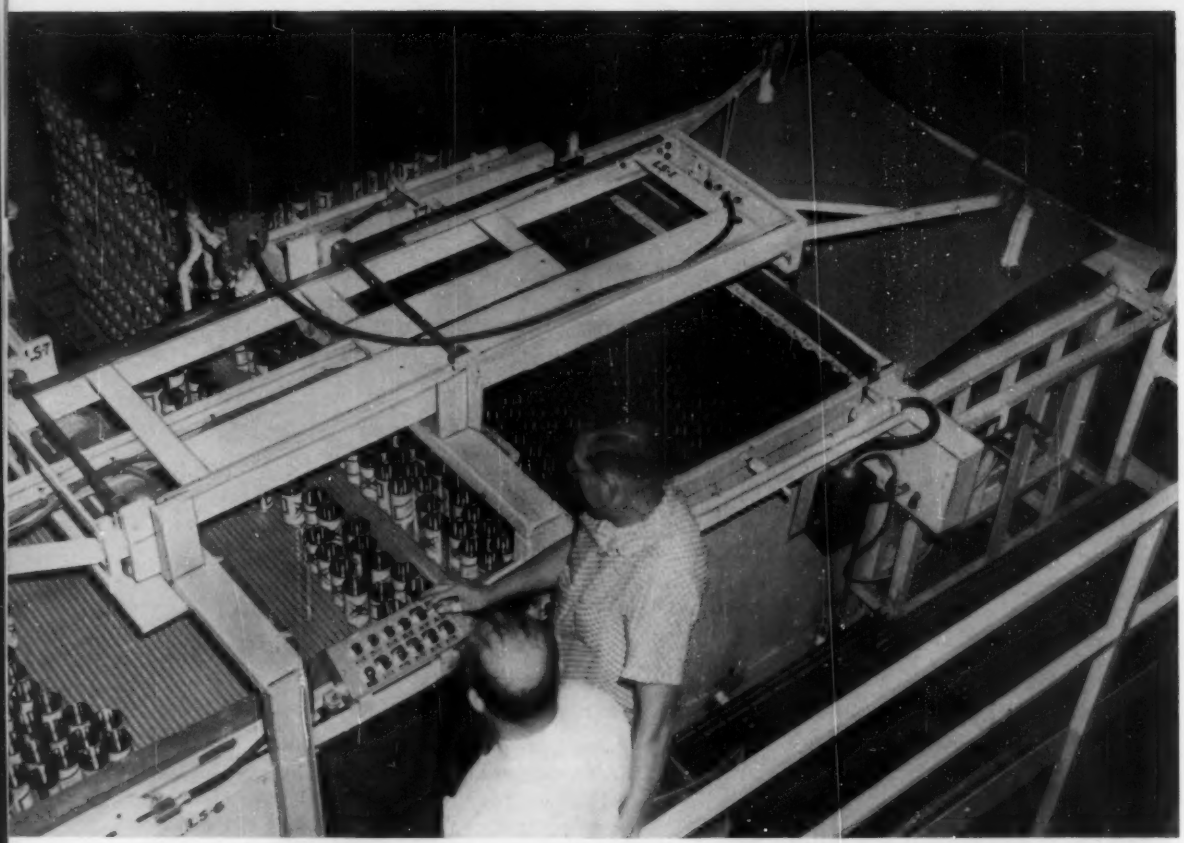


10

9 Further refinement in tape dispensers is seen in this new cutter package for Johnson & Johnson's Band-Aid adhesive tape, molded of polystyrene in three pieces. Polystyrene was selected for dimensional stability. Its transparency clearly displays the roll of tape, protects the side labels and keeps tape free from dirt, wrinkling and color fading. Package molded by Dillon-Beck Mfg., Hillside, N. J.

10 Significant of the continued swing to polyethylene film packaging is its adoption for a new line of Roylies plastic doylies, place mats and coasters by Standard Packaging's Royal Lace Paper Div. The large-sized bag has a perforated closure for easy access to contents. One side of the bag is unprinted for product visibility; the other is printed in three colors. Bags, Central States Paper & Bag Co., St. Louis, using Visking's Visqueen film.

2,000 cans a minute!



Heart of the system *is the depalletizer. Pallets enter from conveyor (upper left). As pallet is elevated by stages, a sweep arm brushes each layer of cans to a woven-wire belt conveyor (left); on its return, the sweep arm, with suction cups, removes chipboard sheet separating layers (upper right). Empty pallets are automatically removed under the machine and are stacked for return to the can plant. Two such depalletizers are in regular use to serve four packaging lines; a third line is on stand-by.*

A new system developed at Miller Brewing Co., Milwaukee, for the unloading and feeding of empty cans from manufacturers' pallet loads reaches a degree of speed and automation believed unprecedented in this type of operation.

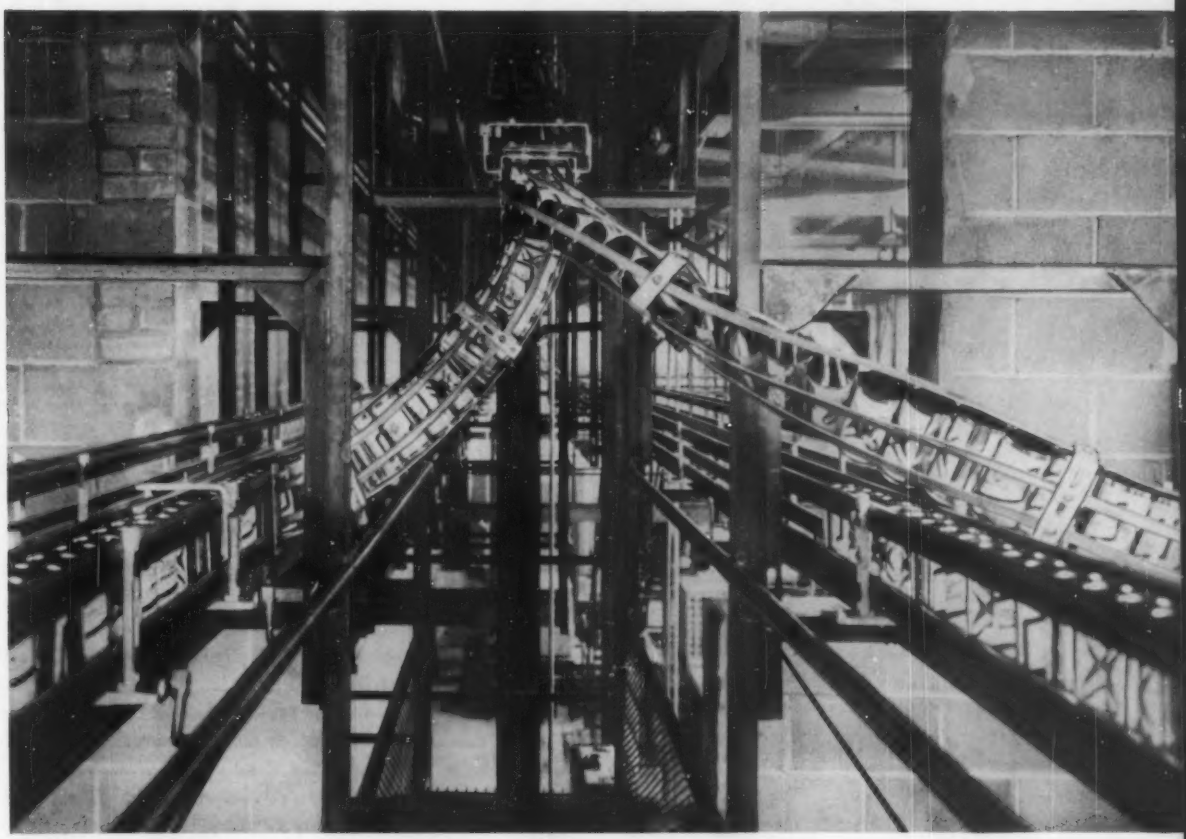
At the rate of 2,000 a minute—the combined capacity of Miller's four can-filling lines—the empties flow from receiving dock to packaging lines with just one manual operation: the removal of corrugated board that covers the palletized cans during shipment. No human hand actually touches the cans.

Principles of the ultra-modern system, which was laid out by Miller engineers, are applicable to any large-volume user of cans. It does away with manual dumping of cans from corrugated shipping cases, saves a large amount of labor, cuts the can maker's own packaging and handling cost, and completely eliminates in-plant storage of empties.

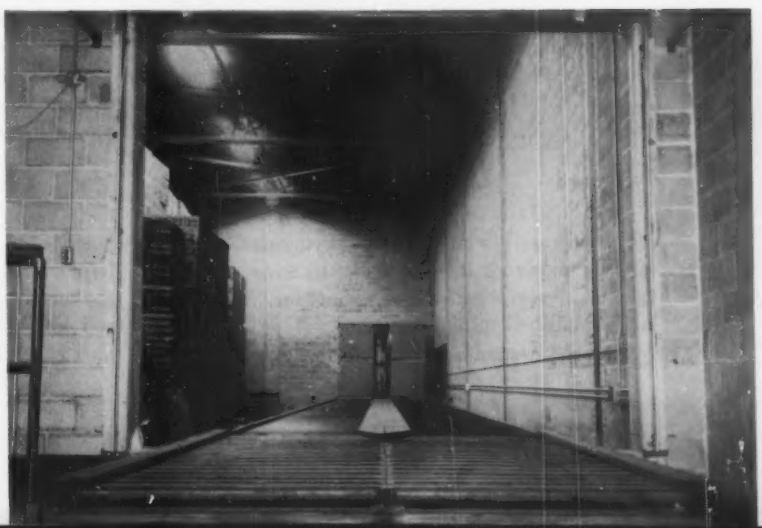
Miller's four 500-a-minute can lines turn out 340,000,000 cans of beer a year. To satisfy this huge consumption, can manufacturers deliver their cans, uncased and stacked nine layers high on pallets, in special trucks which are timed to arrive at the brewery dock one every 50 minutes.

Each truck load consists of 32 wood pallets—two high, two wide and eight deep. Each pallet holds

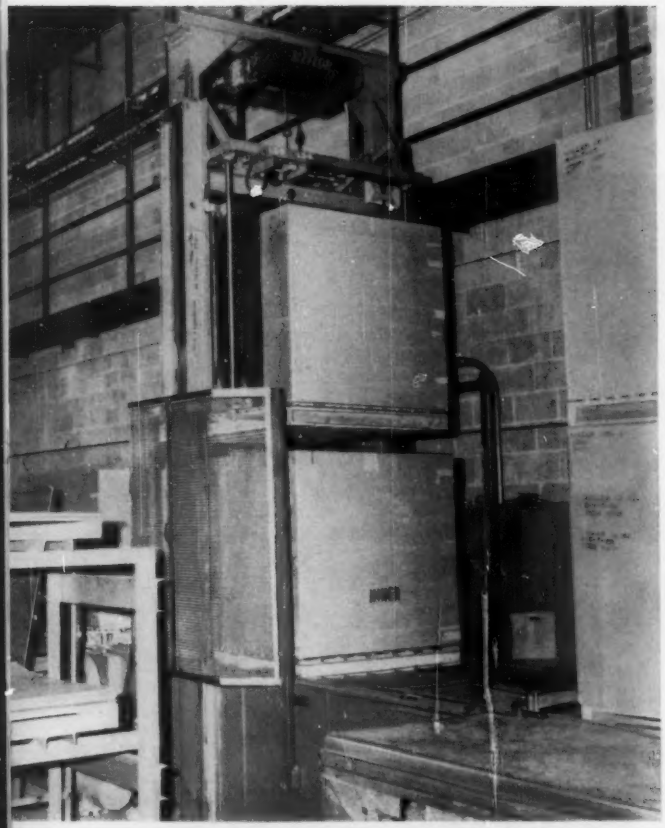
Miller Brewing feeds four beer lines with an automated system that pulls pallets of cans out of trucks, depalletizes, aligns and conveys the cans 700 ft. across a railroad yard to the fillers—without a human hand



Long overhead conveyors *take the cans from two depalletizers to the four packaging lines, 750 ft. away and in another building. Air elevator that lifts cans 30 ft. to the start of the cable conveyors is in background. Conveyors are controlled by action of the packaging lines and have electrical interlocks that switch the palletizers from full to empty lines or shut down the entire feed line.*

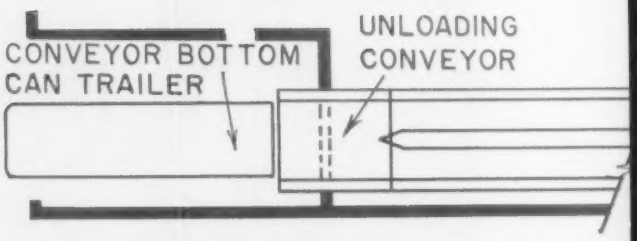


Start of system *is shown from truck's-eye view. Four pallet loads in background, two high, have been pulled from truck, split by center divider and moved toward depalletizers in next room. Idler rollers prevent damage if the pallets back up.*



Second stage *is destacking. Pawls inserted into upper pallet lift it slightly to permit lower one to proceed, then lower the upper pallet to conveyor.*

Flow chart shows flexibility of Miller's high-speed can-feeding line



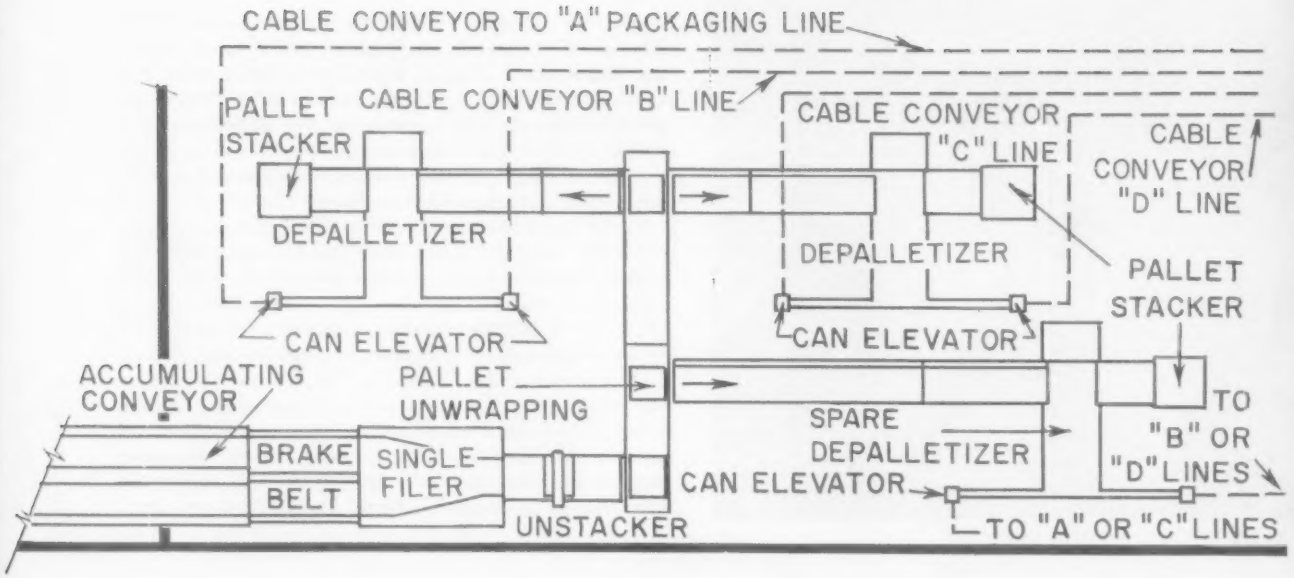
3,240 cans. The trucks are specially equipped with leveling and conveying devices. Two jacks mounted on the back of each truck raise the floor of the trailer level with the dock platform. A motor-driven conveyor built into the truck floor then moves the two rows of pallets out of the truck into a similar conveyor built into the dock and immediately into an accumulating conveyor. An entire load can be removed from a truck in less than two minutes.

The accumulating conveyor, which makes possible the direct transfer of palletized cans from the trucks to depalletizing machinery, is a power-driven carrier equipped with idler rollers to minimize the pressure on the leading pallets. Automatic controls merge the twin lines into a single row of double pallets. Destacking is accomplished by a lift mechanism which inserts pawls into the upper pallet, lifts it slightly to permit the lower one to move on, then lowers the upper pallet to the conveyor. All of this is accomplished automatically.

The single attendant removes the taped-together corrugated boards used to protect the sides and top of the pallet load, inspects the shipment for defective cans and straightens any shifted layers. The pallet is then routed automatically to one of three depalletizing machines—which are the key units in this automatic handling system. Two of the depalletizing machines are used for normal operation, while the third is available for stand-by duty.

Each of the two depalletizers in use is set up to serve two packaging lines. A lift mechanism raises the pallet so that the bottom of the top layer is flush with a wide, woven-wire conveyor. A delicately regulated sweep arm first brushes the top layer of cans onto the conveyor, then on its return cycle removes a chipboard sheet that separates the layers of cans. Succeeding layers are raised and removed in similar fashion and the empty pallet is then automatically shunted to a stacking machine for return to the can-manufacturing plant.

A special problem faced by Miller engineers was the physical separation of the depalletizing and packaging buildings by a railroad yard. This was overcome by the construction of a steel girder bridge. Thus, from the depalletizing belt conveyor, the upright cans are tipped into a horizontal rolling position by means of a "waterfall" which is formed by the large drive pulley of the belt and which keeps the cans from falling sideways. From this point they roll into the bottom of an air elevator, in which they ride 30 ft. upward, cushioned on an air blast,



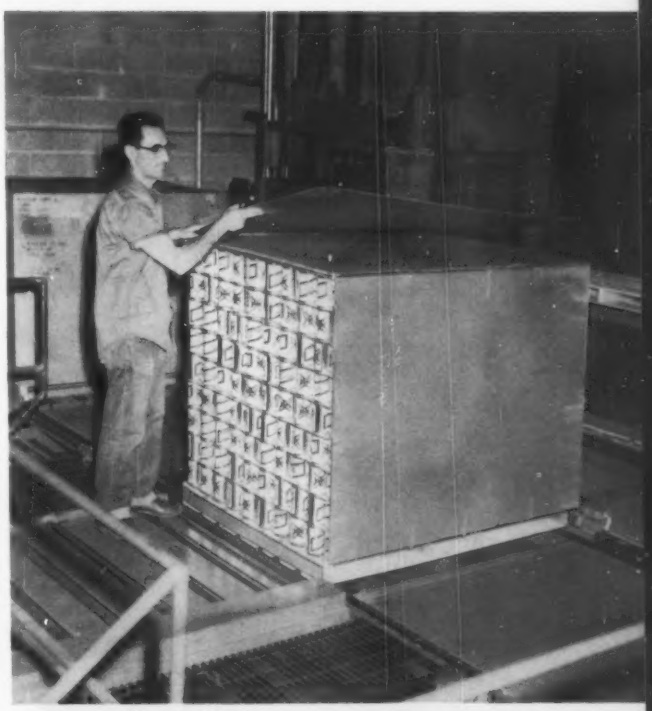
and end up on one of four 750-ft. cable conveyors located in the bridge. There are four of these vertical air elevators in normal use—two to each depalletizer. The cable conveyors move the cans, again upright, to the packaging building.

Each conveyor serves a separate packaging line and is divided into five equal sections. Each of these five sections has its own motors and torque-arm speed-reducer drives.

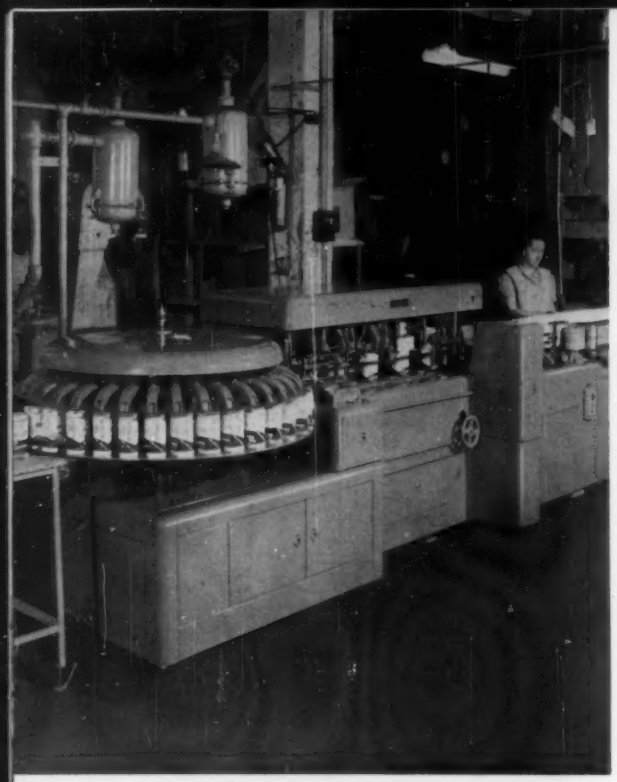
The stand-by depalletizer has its own air elevators, but in this case one elevator can be hooked into either the "A" or "C" packaging line and the other into "B" or "D," depending upon which line needs a supply at the time.

The entire conveyor and depalletizing operation is automatically controlled by operation of the packaging lines. Proximity switches along the conveyors stop and start the cable power. If one packaging line shuts down and the row of cans backs up, the depalletizer automatically feeds the other line to which it is attached. If both lines happen to stop at the same time, so does the depalletizer.

SUPPLIES AND SERVICES: Depalletizers and cable conveyors by Continental Can Co., 700 E. 42 St., New York 17. Air elevators by Peerless Equipment Co., Mountainview, Calf. Floor conveyors and pallet destacker by Standard Conveyor Co., St. Paul 9, Minn. Pallet stackers by Alvey Conveyor Mfg. Co., St. Louis 32, Mo. Cans by American Can Co., 100 Park Ave., New York 17, and Continental Can.



Only manual operation *is the removal of corrugated boards that protect top and sides of pallet loads. This is done just as load enters depalletizer. These 3,240 cans will supply packaging lines for a little more than 90 seconds.*



Cost-saving coffee bagger

A specially constructed coffee-bagging machine now in operation at the Richmond, Va., plant of C. W. Antrim & Sons has increased the company's production speed some 50% while slashing over-all packaging costs by 25%. The straight-line machine bags 1-lb. quantities of Old Mansion coffee at a reported rate of 2,400 packages per hour. Under the former set-up, which required more production-line personnel, packaging speed was about 1,600 per hour.

At the first station in the new machine, the empty paper coffee bag (with a Pliofilm inner liner that retains product freshness and aroma) is elevated by vacuum to the filler. An air blast opens the bag to accept a pre-weighed discharge of product. After filling, the bag travels to a vibrator, which settles the ground coffee, and then to a tucking station where the bag is closed and its shoulders are shaped. At the next station, the inner liner is heat sealed and excess bag top is trimmed off. Then the paper bag top is glued and folded over. As the final operation, the filled bag is held under pressure until the glue dries. *Bagging machine by Consolidated Packaging Machinery Corp., Buffalo 13.*

COST

Better bag for carrots

Medium-density polyethylene film, extruded by the chilled-roll method, is paying handsome packaging dividends to a California marketer of fresh produce. The company, David Freedman & Co., El Centro, reports that packaging costs have been cut 20% and that production speeds have risen 15 to 20% since adopting the material for bagging Clip Top brand carrots. The printed bags used by this packager are prefabricated of 1.25-mil film.

Freedman points out that bag breakage has been virtually eliminated by the tough film. Formerly, 2% of the company's output had to be written off because of film-bag breakage.

Another economy factor—the increase in produce-packaging speed—is credited by the packager to the film's excellent slip and stiffness characteristics, which are reported to minimize static problems and to make the bags easy to handle and open. A built-in merchandising advantage is the extraordinary clarity of the chilled-roll-extruded film, which enhances product appeal at the point of sale. *Bags by Texas Plastics, Elsa, Tex., using Eastman Chemical's "Tenite" medium-density polyethylene.*

Break-apart economy

Savings of up to 50% in handling and shipping costs and an increase in sales are reported by McIlhenny Co., Avery Island, La., since going to a divisible shipping container for institutional shipments of Tabasco pepper sauce.

The packager's new corrugated shipper is actually three units in one. It consists of two 1-doz.-bottle cartons packed inside a printed outer carton which has a perforation line dividing it vertically in half. This construction satisfies McIlhenny's objective of encouraging purchase of the 2-doz. pack while making it convenient for distributors to fill 1-doz. orders. For these smaller orders, the distributor simply breaks the outer carton in half along the perforation line and removes the two sealed and printed corrugated cartons inside. They are ready for shipment and require no gluing or taping.

The packager says that its new break-apart shipper, although slightly more costly than the conventional corrugated carton, eliminates a former need for two different-size containers, with a resultant reduction in handling and shipping costs. *Carton by Hoerner Boxes, Keokuk, Ia.*

CUTTERS

Tough, but gentle fibre strapping tape cuts costs 40%

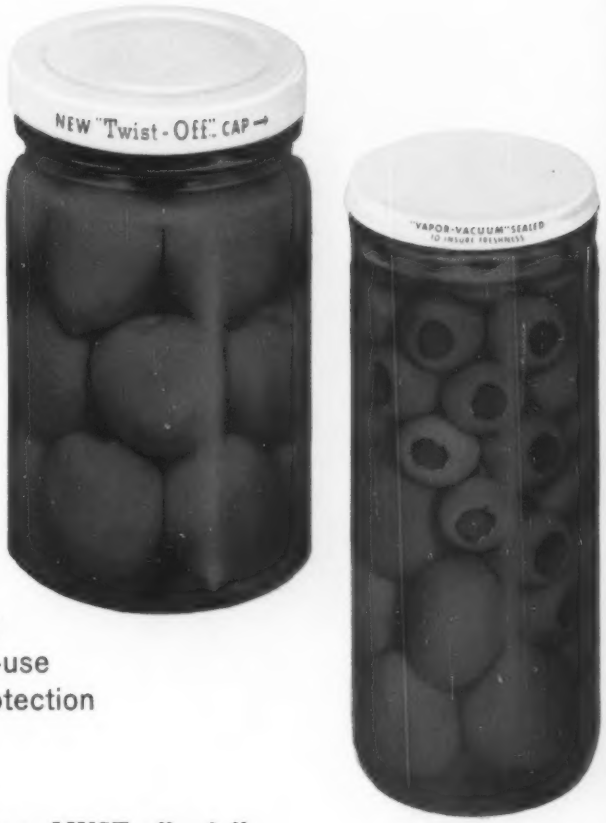
A 40% saving in strapping-material cost is just one of the benefits reported by a Canadian furniture manufacturer since adopting a tough rayon-fibre tape in place of metal for securing corrugated shipping crates. The company, Biltrite Furniture Mfg., Montreal, says the flexible and printable tape does a more than adequate strapping job, yet will not bite through the corrugated to scar the surface of the furniture inside. This performance factor is credited with creating consumer good will that is reflected in a 10% sales upturn. And return of damaged goods has been minimized.

The fabric tape is applied in standard fashion, using a special lightweight strapping tool. An inch-long metal seal on the tape is crimped to hold it firmly in place.

Aside from low cost and good performance, Biltrite cites other plus characteristics for the tape. Among them are that it is lightweight (thereby reducing shipping costs), nonrigid (less danger of cut hands) and can be removed with scissors or knife. The flammable tape can be disposed of after use by burning it. *"Caristrap" rayon strapping tape by Canadian Ribbon Tape, 189 83 Ave., Montreal 40.*

All these
NO OXIDATION
EASY OPENING
NEW "Twist-Off" CAP
NEW "Twist-Off" CAP
"VAPOR-VACUUM" SEALED TO INSURE FRESHNESS
Bell-View
Contadina
Empress
GIANT
COLOSSAL
Pepto
PROGRESSO
REEVE SELECT
Silvia
Van Dyke
YORK
Sunshine
VITA
WESTFIELD
LIBERTY

packages, too, have GONE MODERN!



THE NEED —maximum appetite appeal
maximum convenience-in-use
with perfect long-term protection

THE ANSWER—it's all in the closure!

In olive and cherry packing circles, there's a preponderance of agreement on these key facts:

1—**The package MUST do a good job of display**—so that the size, style, and color of its contents may create maximum impulse buying.

2—**The package MUST be trouble-proof.** And to make it so, there's general agreement that it should be sealed with Vapor-Vacuum Caps.

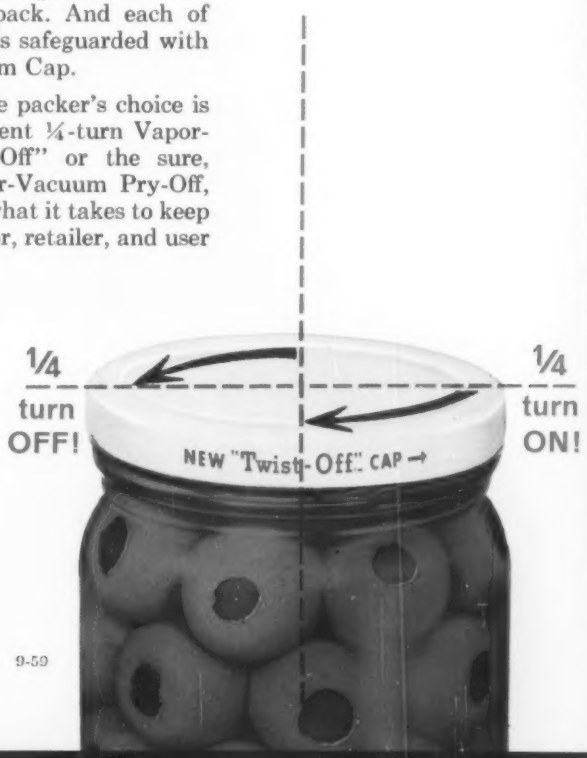
Olive and cherry packages sealed with these caps don't leak. They stay clean, attractive. They don't permit color loss or loss of firmness. They offer the best of protection against returns.

3—**The package MUST offer full convenience.** Here, again, the Vapor-Vacuum Cap does the trick, providing the easy opening, easy reclosing, easy access to the contents which shoppers want.

The packages listed at the left are each representative of full lines. Among them, they represent the major part of the pack. And each of them, of course, is safeguarded with the Vapor-Vacuum Cap.

Here, whether the packer's choice is the extra-convenient ¼-turn Vapor-Vacuum "Twist-Off" or the sure, economical Vapor-Vacuum Pry-Off, the package has what it takes to keep packer, distributor, retailer, and user happy!

VAPOR-VACUUM®
Seal and Re-Seal
WHITE CAP COMPANY
SUBSIDIARY OF CONTINENTAL CAN COMPANY



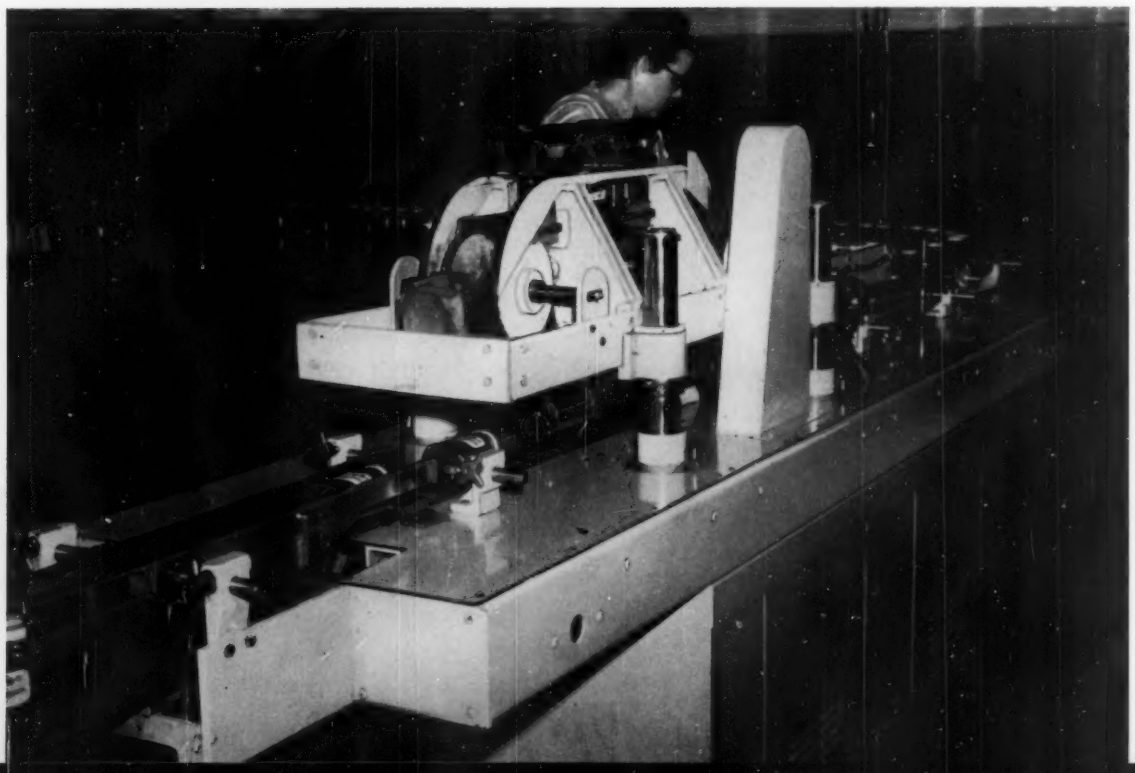
9-59

Automatic labeler with

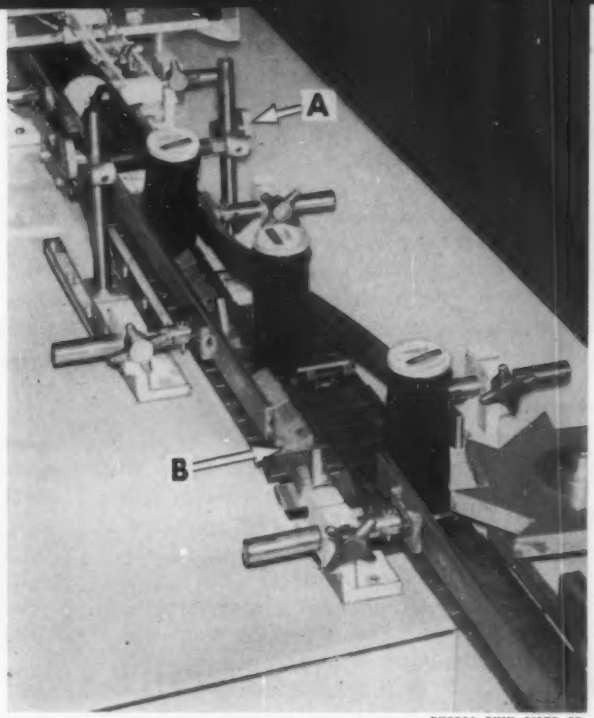
Applying irregular spot labels at speeds up to 150 per minute,
Texas pickle packer's continuous unit
feeds jars horizontally, erects them after labeling

Round, tapered or paneled. *New automatic labeler applies regularly or irregularly shaped spot labels to glass jars that range in size from 8 oz. to ½ gal. and vary widely in shape. Brown-Miller Co., Texas pickle packer, has many labels and short runs, requiring a high-speed machine that can be rapidly changed over.*

High-speed labeler *employs unusual technique of labeling jars in horizontal position. Rotary compression unit (center) applies pressure to labels for 2½ machine cycles, reduces "flagged" labels and facilitates handling of wet containers. Jars are returned to upright position by dual sprocket wheels (not visible).*



flexibility



PHOTOS PHIN SALES CO.

Jar feed *incorporates saw-tooth star wheel and special chain belt that has cam-actuated links to position jars positively on the main machine conveyor. Tilting bar (A) gently pushes jars over onto V-shaped carriers (B), mounted on the belt. Quick-release clamps on side rails permit rapid adjustment of the machine for jars of different size.*

The speed and accuracy of automatic labeling are combined with the flexibility usually found only in semi-automatic machines in a significantly new model of a Canadian labeler recently adopted by the Brown-Miller Co., Texarkana, Tex.

The unusual feature of this unit is that it turns the containers on their sides to apply labels of virtually any shape by means of accurate and positive picking fingers and continuously rotating pressure pads.

Because of its unique mechanical action, this machine is reportedly capable of handling spot labels made from virtually any type of paper, foil or glassine material. The operation also suggests that this unit would be useful in affixing labels to other types of packages made from paperboard, metal or plastic. Thus, this application should interest packagers in many different industries.

The flexibility in the operation of this machine on glass jars is demonstrated by the installation at Brown-Miller. This company, which packs pickles in containers holding from 8 oz. to ½ gal., requires high-speed labeling and a machine capable of swift change-over to handle spot labels that range in shape from diagonal strips to trapezoids.

The new labeler, which replaces a semi-automatic unit, more than doubles the output of this packaging line and employs smooth and continuous rotary motion that avoids both machine wear and damage to the containers. The company generally operates this machine at a speed of from 80 to 100 jars per minute, though it is reportedly capable of speeds to 150 containers per minute. Fast change-over is an important factor, since the company switches products and labels many times per day. Change-over on this labeler reportedly takes from 2 to 5 min. for most containers—and no more than 10 min. for glass jars and labels of unusual shape.

Several mechanical innovations contribute to the machine's efficiency and versatility.

At the infeed, an unusual star-wheel and link-belt combination enables containers of almost any shape or size to be accurately positioned for labeling. Containers enter the machine in a conventional vertical position. The star wheel is formed in the shape of saw teeth—unlike most other similar devices which conform to the shape of the containers—and only three wheel sizes are necessary to accommodate the entire range of the machine.

The wheel works in conjunction with a special stainless-steel roller chain equipped with nylon top plates. Every eighth plate on this carrier is fitted with a special linkage that permits the link to lie flat until it passes the star wheel, at which time it cams the plate up behind the jar—precisely locating the container and accurately transferring it to the main machine conveyor.

As a safety device, the star wheel is driven by a spring-loaded, jaw-type clutch. In the event that a bottle enters the machine out of time, this clutch permits the star wheel to stop turning and agitate vertically, holding the bottle until the next machine cycle.

To put the containers in a horizontal position for labeling, the machine employs a simple

spring-loaded bar—positioned across the machine conveyor—that tips the containers backward onto V-shaped carriers mounted on the conveyor. The spring mounting of the bar and spring shock absorbers under the package conveyor prevent damage to even the largest glass containers, according to Brown-Miller officials.

How labels are applied

Labels are applied to the bottle by positive mechanical means that insure accurate spotting. The label magazine is inclined 45 deg. to reduce friction and give a consistent feed regardless of the number of labels in the magazine. A short-stroke vacuum rocker-bar pulls the front edge of the label into position, where it is removed from the magazine by mechanical grippers on a rotating label drum. Irregularly shaped labels are accommodated by simple, cartridge-type inserts that reportedly can be slipped into the magazine in seconds.

The vertical position of the label on the jars can be adjusted, while the machine is running, by manipulation of a hand wheel that advances or retards the label drum through a differential gear chain. Glue is applied to the labels directly from dual glue rolls that can be very accurately adjusted by a micrometer screw governing the amount of adhesive applied. Addition of heaters is said to permit this machine to operate with thermoplastic adhesives, too.

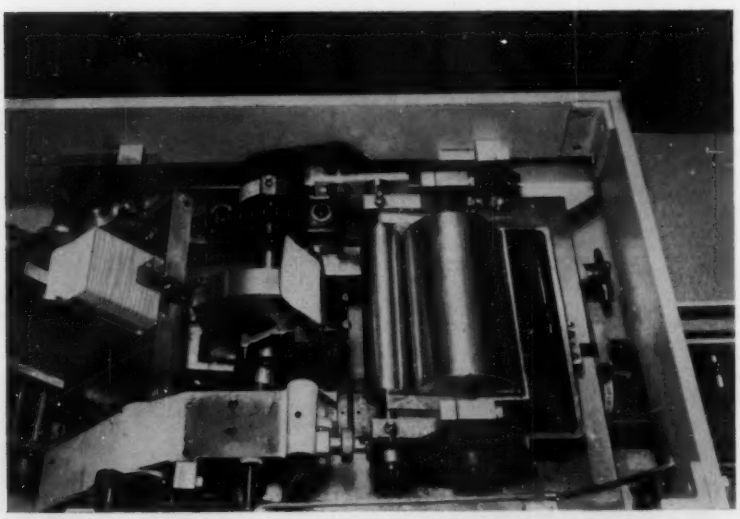
Label compression is supplied by chain-mounted pressure pads that rotate continuously and apply pressure over the entire surface of the label for 2½ cycles of machine operation. According to the supplier's engineers, this is very advantageous when running wet jars, since it enables the glue to absorb all moisture from the underlying surface of the bottle while the label is held under strict control. The rotary mechanism also minimizes lifted edges, particularly on paper-backed foil labels that have a tendency to curl. At the label applicator and compression point in the machine, the container conveyor is further spring loaded to allow variations up to ¼ in. in package thickness.

The jars are returned to an upright position by a pair of pocket wheels which rotate in a vertical plane to raise the packages and slide them onto a dead plate at the exit end of the machine. Spring-mounted bars on each section of these pockets enable large containers to be raised with a minimum of shock. The wheel can be adjusted longitudinally and is independently timed for containers of different size.

Adjustment of the machine for different jars is extremely fast. A single hand crank controls height of both the labeling mechanism and the compression head. Infeed and discharge guide rails are equipped with quick-release clamps and the star wheel can be changed in a minute. Adjustments or changes in the V-shaped bottle carriers and the bottle lowering and raising devices are seldom necessary for most conventional sizes of containers, but can be quickly made where necessary.

Special thought has been given to simplifying clean-up where this machine is used for food packaging. The flush top of the unit is constructed of a special plastic sheet—a high-pressure melamine-faced phenolic/paper laminate—resistant to food stains. An enclosed drain trough located under the main package conveyor catches any drippings and enables the machine to be hosed down or steamed. At the same time, it protects the electrical and drive mechanisms.

SUPPLIES AND SERVICES: Labeler made by Phin Sales Co., Ltd., Toronto 6, and distributed in the U.S. by Package Machinery Co., East Longmeadow, Mass.

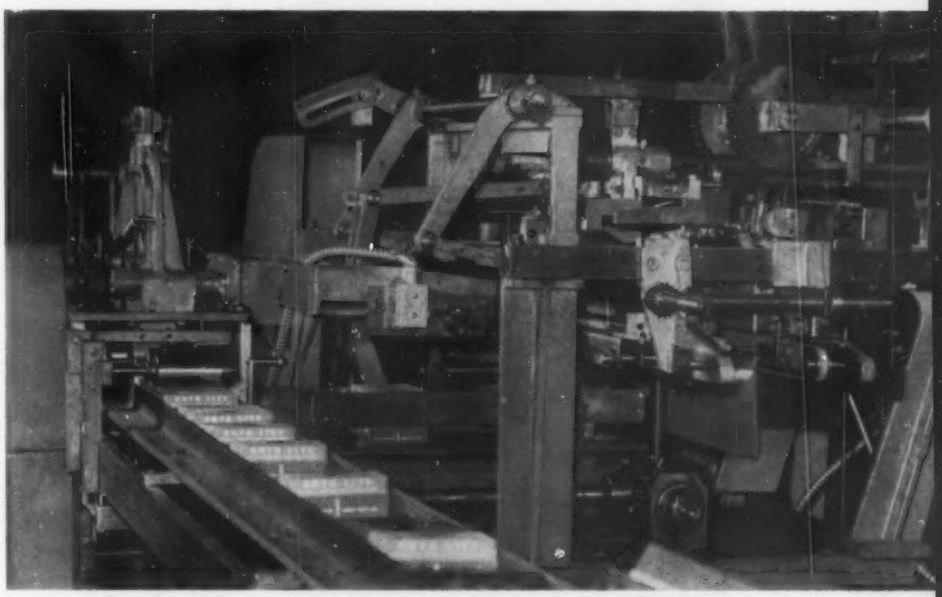


Label feed *employs vacuum bar and rotary drum with mechanical fingers (center) to insure positive application. Dual glue rolls with micrometer adjustment accurately control thickness of the adhesive.*

Bundling in PVC

Electric Auto-Lite finds success and cost saving in use of soft, clear, strong vinyl film, now wrapped, folded and heat sealed automatically

Tough, transparent *polyvinyl chloride film, used to bundle six cartons of small automotive parts, provides clear view of code identification on inner packages. Note neat end-fold heat sealing of this soft thermoplastic film.*



Bundling machine *accumulates, stacks and heat seals cartons automatically in group of six. Modified standard machine handles vinyl film at full rated speed and cuts labor by 25% for this packaging line.*

Adoption of a transparent polyvinyl chloride film overwrap, applied with automatic machinery, has produced major cost savings in the bundling of about 150 different automotive parts for Electric Auto-Lite Co., Toledo.

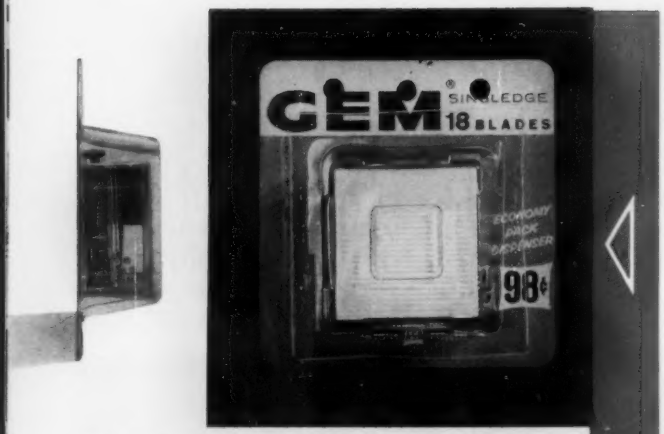
Replacing a manually loaded folding carton that previously contained 10 unit packages, the low-cost transparent film is now used as an end-folded and heat-sealed overwrap for six cartons of the replacement parts, which range from distributor contact sets, condensers and rotors to generator and starting-motor brush sets. Providing a clear view of the individual inner cartons, which contain imprinted code identification, the film and packaging technique save one printing operation and reduce the cost of this intermediate package by 90%, while trimming cost for the packaging operation by about 25%, according to Electric Auto-Lite.

The company borrowed the film-bundling idea from the drug field. But Electric Auto-Lite required long shelf life for its products and greater-than-ordinary strength in its bundling film to withstand the weight of the automotive replacement parts and unfavorable conditions of handling, storage and climate in far-flung service outlets.

An answer to these problems is the tough, 100-gauge PVC film (1 mil), which possesses excellent dimensional stability and transparency and can be run at good production speeds on adapted conventional packaging machinery. Test packs of parts in this film, which were first produced in February, 1958, still show no deterioration.

Loaded and imprinted cartons are transported via turntable and conveyor to the modified standard bundler, where they are accumulated, stacked and wrapped in a completely automatic operation.

SUPPLIES AND SERVICES: Type M-17 "Vitafilm" polyvinyl chloride film by Goodyear Tire & Rubber Co., Akron 16, Ohio. Bundler by Crompton & Knowles Packaging Corp., Holyoke, Mass.



Fully automatic, straight-through production.

Hand-loaded, special-deal, two-item card.

Custom-formed blister hand fed through sealing section.

Versatility

Few packaging areas have shown swifter improvement in machinery and package design than has blister packaging—which in two years has moved from slow, hand and semi-automatic packaging to high-speed operations on integrated machines.*

The major remaining problem has been how to combine the high production speeds now available on narrowly adjustable automatic machines—suitable only for big-volume, long-run items—with a flexibility in package and product size and shape that will fit the needs of many more packagers.

One solution has been found by the American Safety Razor Products Corp., New York, a company that has made a close study of design and production requirements in fitting the versatile hang-card package to both high-volume production and premium applications.

In retail warfare among major razor and blade manufacturers, this company depends mainly on lively packaging ammunition at the point of purchase to offset its competitors' heavy advertising artillery. In this battle, ASR's chief weapon has now become the thermoformed blister package, carefully designed to overcome problems inherent in relatively heavy, sharp-cornered products requiring long shelf life.

Packaging for the campaign comes out of the company's Staunton, Va., plant, where ASR has just installed a new, two-section, automatic blister

*See *Great Packaging Discoveries*, "The Thermoform," MODERN PACKAGING, this issue, page 114.

All these can be produced on a single blister-packaging machine

Two-section unit can run fully automatically at high speed,
can be semi-automatically or hand loaded,
can fill and seal pre-formed blisters with forming station cut out

in a blister machine

forming, filling and sealing machine. This equipment, noted previously for its high speed on a narrow range of product size, has now been modified to provide these broader capabilities:

1. Automatic packaging of a single product at speeds as high as 92 units per minute. These high rates cut packaging costs by increasing output per manhour and reduce cost of packaging materials through the economy of efficient machine design.

2. Automatic packaging of five different products simultaneously.

3. Hand loading and automatic sealing of complex blister shapes and combinations at production speeds of more than 50 packages per minute.

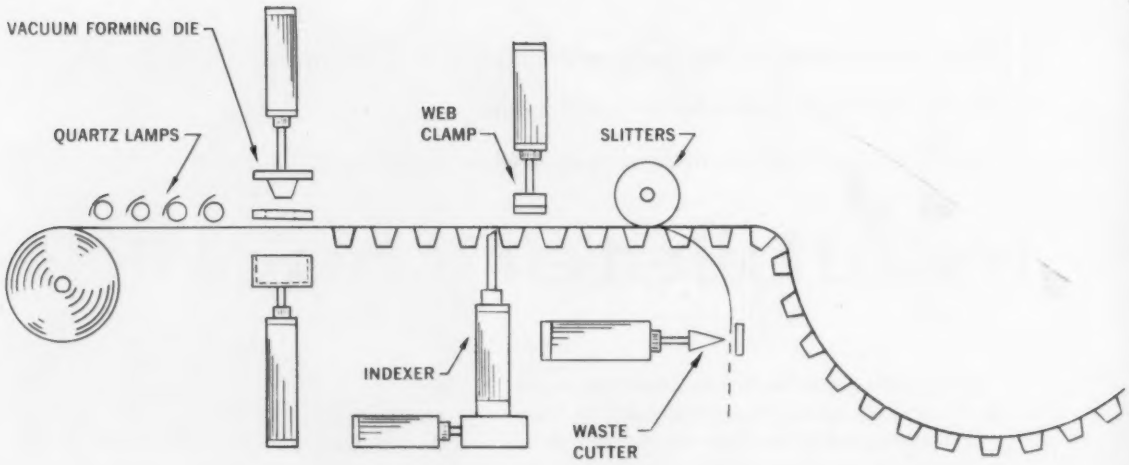
ASR's successful adoption of this machine for automatic, straight-line packaging of large-volume dispenser packs of Gem, Blue Star, Treet and Pal razor blades—as well as for semi-automatic packaging of such premium deals as a combination of dispenser, razor and fishing lure—has enabled the company to use economical, single-layer, heat-seal-coated cards, which cost only three-fifths as much as fold-over cards used in many small-volume blister-packaging operations.

Production economies are impressive. On volume products, the automatic integrated machine reportedly has resulted in raising the output per manhour 176% over conventional hand-sealing techniques and 90% over the best semi-automatic fold-over operations tested by the company. Using the unit for semi-automatic packaging of special deal packages, ASR has achieved a 52% increase in volume over hand packaging of comparable combination packs.

Special considerations

These gains and the successful performance of the package at shipping and retail points involve more than just satisfactory machine operation. Right

Forming section *of new highly adaptable American Razor blister-packaging machine contains special quartz lamps (left) to soften acetate sheet and vacuum-forming die (center) to fabricate up to five blisters at a time in the web. Rotary slitters (right) here cut web material into five bands.*



Schematic drawing shows how

at the beginning, ASR discovered that special consideration must be given (1) to blister design and (2) to the coating on the backing card in order to compensate for the weight and sharp edges of the blade dispensers and premiums.

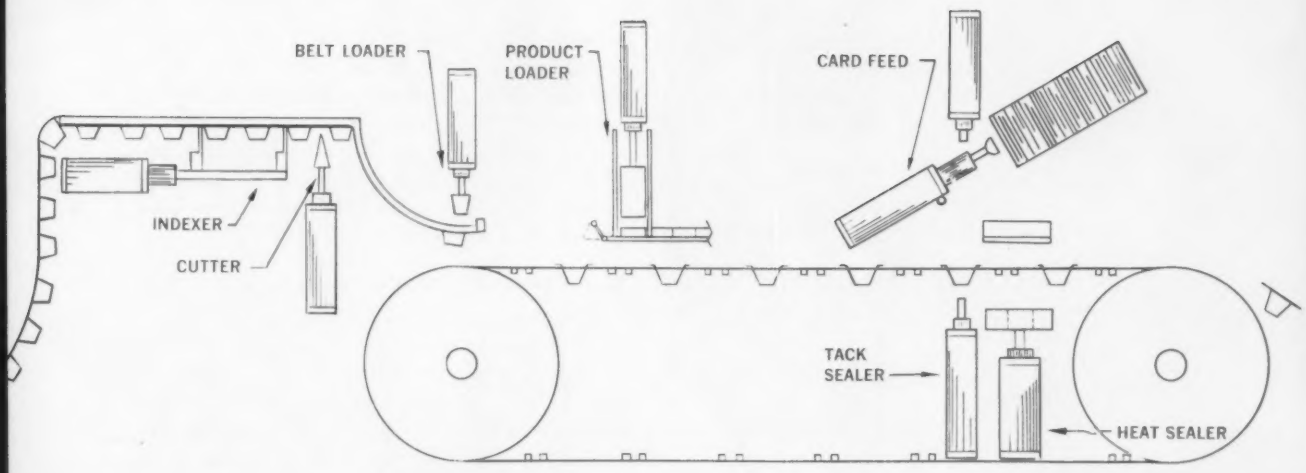
Density and coating of the backing card are important to insure integrity of the package for long shelf life. After much development work, ASR adopted a 16-pt. clay-coated newsback board with a special pyroxylin-type coating. Since minor variations in board density and coating formulation affect the card's sealability, board samples are tested under production conditions both before and after the printing operation.

Special designs for the blisters—which are made from 15-mil extruded acetate—insure adequate cross sections in deep draws and keep sharp product corners from rupturing the package. Ingenious shoulders on the blisters "suspend" the product and prevent its corners from contacting the plastic bubble. By a modification of a mold design, dimples were added to the face of the blister for extra control of the product and to prevent vibration of the product during shipment. Special odd-shaped blisters for the razor and fishing-lure premiums closely contain these items, yet display them attractively.

Modifications for flexibility

Achievement of operational flexibility necessitated several interesting modifications in the auto-

Loading and sealing *of product takes place in second section of machine (right). Girl at left is placing razor dispensers in five channels of continuous belt which takes them to ram loaders (vertical elements at center of machine). Meanwhile, bands of acetate from forming section (left background, behind post) have been cut into individual blisters and are feeding into loading machine at left end. Card feed and heat-sealing section are visible near take-off end of machine, where finished packages drop from the pockets into sectionalized glass-fibre belts.*



two machine sections work in continuous set-up

matic straight-line forming, filling and heat-sealing machine. The modifications were required primarily in the unit's forming and filling sections.

A major advantage in this automatic packaging machine is its fully integrated action and speed, which has been boosted from an initial 15 cycles per minute to nearly 20 per minute. From roll-stock acetate sheet, a continuous web of blisters is formed. The web is slit into strips of individual bubbles, which are filled with the product either by hand or automatically and are automatically heat sealed to die-cut hang cards.

Flexibility of operation—the key to much broader use of the machine—results from separating the forming section from the filling and sealing section. Blisters of various shapes and sizes can be preformed on the first section of the machine—or they may be obtained from an outside supplier and fed into one or more channels on the filling and sealing sections of the unit. The latter technique can reduce or even eliminate the cost of forming dies and enable economical runs of as few as 50,000 units of a special promotional package.

Further economies are obtained by combining automatic and hand-feeding techniques for the products. And the machine-produced packages have the advantage of perfectly centered blisters, making the package hang straighter on rack displays.

Following are descriptions of the equipment's three variable operations.

1. Automatic single-product packaging

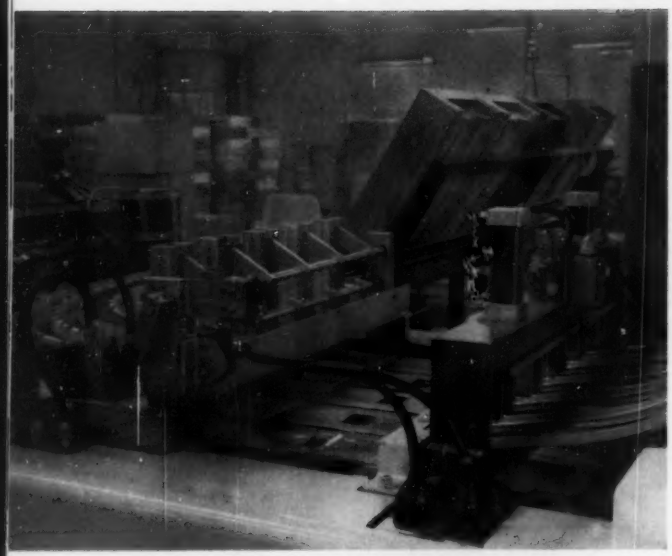
Because of its wide applicability, the operation of the automatic, straight-line machine deserves detailed explanation. This is the sequence of mechanical actions that take place when the unit is used for continuous and automatic packaging of one product at high speed:

Acetate sheet is pulled from the roll under four quartz lamps, which range from 500 to 2,500 watts. By raising the surface temperature to 230 deg. F., the lamps soften the plastic. At the next station, the blister pockets are thermoformed by a reciprocating vacuum-forming device, which consists of an upper male die, a stationary plate and a lower box that clamps film against plate to contain the vacuum. The vacuum, ranging from 10 in. for shallow draws to 20 in. for deep containers, is pulled through channels in the stationary plate. The male mold plunges down through holes in the plate to form the blisters. In the case of large blisters, the vacuum is pulled through tiny holes at the tips of the male molds to fashion the dimples in the faces of the containers.

Water cooling of key frame members in the preheating and molding stations keeps these machine parts at constant temperature.

As the plastic sheet is pushed along by an indexing device, rotary slitting knives divide the five-wide web of blisters into single bands and trim the outside edges.

A reciprocating knife, which is also located at this point, can be disengaged to allow continuous bands to run directly into the filling and sealing sections of the machine, or it can be set to cut off lengths of from one to 100 blisters. With this device, ASR can make special blisters on the first section of the machine and cut them into 8-ft. strips for storage—later feeding them into the second section



Key section *of packaging operation is shown here, with line flow from right to left. Formed acetate blisters feed down inclined channels at right; are automatically positioned in glass-fibre sections of continuous conveyor (center) and receive product from overhead automatic loaders (left center). Note product feeding belts coming to loaders at a 90-deg. curve.*

of the machine for hand loading of the company's special premium packages.

In the straight-through operation, however, continuous strips of blisters enter an indexing station on the loader. Here, five strips at a time can be pushed into a reciprocating knife, where individual blisters are trimmed from the webs and loaded into pockets in a Teflon-coated glass-fibre belt.

The loading conveyor is composed of short pieces of glass-fibre belting, secured at each end by a pair of clamping bars arranged opposite each other on chain carriers. Under normal high-speed operation, there are five strips of belting across the width of the conveyor between each pair of bars. Each belt segment contains a single cavity for a blister. There are 20 stations (spaces between bars) around the circumference of the conveyor.

For products necessitating wide blisters—such as the ejector blade dispenser and the special deal packages—fewer strips of wider belting are used.

Razor-blade dispensers are automatically placed into the blisters at the next station, feeding from a five-lane belt, which is loaded by a single operator. Backing cards are applied by a vacuum device and are lightly tacked by a heat sealer.

Final heat sealing occurs in the next station, where a rubber-covered back-up plate is located directly over the five carrier belts. The main heat-sealing die rises under the glass-fibre belt, pressing blister and cards against the back-up plate for 1¼ seconds. Sealing heat (475 deg. F.) is thus transferred through the glass cloth instead of the heavy board of the card—which accounts for the fast operation of this machine.

After passing through a cooling cycle, the completed packages are knocked from the glass-cloth belts by stationary blocks and removed to hand-packing lines for casing.

2. Automatic five-product packaging

Using this same mechanical set-up, as many as five different products can be automatically packaged at the same time. The only changes necessary are (1) in the forming die, which must house the different molds needed for blisters of each size and shape, and (2) in the card feed, which must be adjusted for varied card sizes or card positioning on the blisters. The divided feed belt enables different products to be routed to the correct loader without any change in this section.

In a further demonstration of the flexibility of this machine, automatic feeding on four lanes of blisters may be combined with hand feeding on the fifth, the latter for short runs of a particular specialty product or blister.

3. Hand-loading alternative

While one or more automatic feeders can be disengaged and replaced with hand-loading operators for combined volume and short-run packaging, the entire automatic loading station was removed and replaced by manual loading during the long-run packaging of the multiple-blister razor and fishing-lure package combinations.

On the second section of the machine, five operators loaded the lures in special pre-formed blisters, which were delivered to the line on a special feed belt. Here, two operators placed the loaded lure blisters in pockets in the glass-cloth belt, which were specially cut to accept all of the special blister shapes. Two other operators loaded the dispenser blisters as they were formed and cut apart in the regular machine operation.

All the remaining machine actions were automatic and this efficient operation turned out the three completed deal-combination packs at an average rate of 52 packages per minutes.

There is almost no limit to the types of special blisters and combinations that can be put together on this machine, according to ASR officials.

SUPPLIES AND SERVICES: Automatic blister forming, filling and sealing machine by Packaging Industries Ltd., Montclair, N. J. Card coatings applied by Perfect Finishing Co., 200 Varick St., New York 14. Roll-stock acetate sheet by Celanese Corp. of America, Newark 2, N. J.

"Knox's quality product meets our rigid specifications," says production manager of major food packing firm

The production manager of one of the South's largest packers of peanut butter, jams, jellies, mayonnaise, coffee, and salad dressings,* recently reported on his firm's extremely large use of glass containers:

"Thermal shocks involving rapid temperature changes and production line speeds of more than 100 units a minute, innumerable sharp impacts of glass-on-glass and glass-on-metal, and top clarity to permit immediate product recognition—these are all factors that must be overcome by our glass container suppliers.

"We've been using Knox Glass jars and bottles continuously for almost 15 years. They have consistently met our requirements in dimensions, cleanliness, clarity, and delivery service. They deliver a quality product that meets our most rigid specifications.

"Prompt delivery—often overnight—with a minimum of rejects is also a must for our operation. We plan on operating with a minimum glass container inventory, so the glass suppliers we use have to really give us service. We get this kind of service from Knox."

Let your Knox representative show you how Knox can supply you with top-quality glass and top-quality service —consistently. Contact Knox Glass, Inc., Knox, Pa.

*Name available on request.

the new / **KNOX GLASS**

What worth packaging

For the past four years, a small but steadily growing procession of trained young men has gone directly from Michigan State University's School of Packaging into responsible jobs in various phases of packaging. All indications are that these knowledgeable neophytes are merely the vanguard of an army yet to come.

The reason for this predicted upsurge in packaging graduates is simple enough. Package users and suppliers alike realize that future success is more than ever dependent on the capabilities of people now receiving their first pay checks. A company could ask no safer risk than a man with a solid university-level foundation in packaging, buttressed by summer-employment experience in the field.

On these pages you are going to meet eight young men with just such qualifications. They are representative of the 156 men who have graduated from MSU's School of Packaging and who, for the most part, have stepped directly into packaging jobs that would otherwise have required years of experience. But first let us review the history of the school, the only one in the world to offer a four-year undergraduate course leading to a degree in package engineering.

In 1952, a curriculum in packaging was instituted as a major in MSU's Dept. of Forest Products. It had its beginnings in a suggestion from John Ladd, vice president of General Box Co. and a graduate of MSU. The job of developing the packaging curriculum went to Dr. James M. Goff, now associate professor in charge of the school.

How a balanced curriculum arms a student for success

James Johnston of Gaylord Container: in 10 months, a full-fledged team member.

James R. Johnston, who was the first student to complete a full four-year curriculum in packaging at Michigan State, has been employed by Gaylord Container Corp. for just 10 months. During that short time he has become, in Gaylord's words, "a full-fledged member of the Research and Development team." His title is package design engineer.

Concrete evidence of Jim's progress with Gaylord is that he is now almost exclusively responsible for the design of the supplier's "Drumpaket" corrugated shipping containers. In addition, he has originated new packages and packaging methods for many items.

Jim first heard of MSU's packaging curriculum as a senior at Milwaukee's Marquette High School. Because the breadth of the program squared with his own duality of interests in sales and engineering, he enrolled in the course. Looking back, Jim sums up the value of MSU's School of Packaging this way: "It has three outstanding features: a wide and varied program, a chance to work in the industry and to analyze a real industrial problem."

For the first of these, Jim says the school's balanced curriculum gave him insight into packaging from the viewpoints of an engineer, a production man, a materials handler, a cost estimator, a salesman and an advertiser.

"I think the summer requirement of 16 weeks' employment in some phase of packaging is of prime importance," he continues. "It gives one a working knowledge, along with the opportunity to apply theory learned in the classroom. By the time he graduates, a student has got his feet wet and does not expect every problem to be solved by the book."

Jim emphasizes that a course in packaging problem-solving taught him to think for himself: "I learned to set up my own testing procedures, to carry out the program and to submit a report."

education?

Here are the stories of eight graduates of Michigan State's School of Packaging—what they've done, how they like it, what they mean to their employers

So successful was the packaging program that last year it was formally elevated from an option in the Forest Products Dept. to its present status as a full-fledged School of Packaging. A drive is now under way to raise $2,000,000 to build and equip a home for the school on MSU's campus at East Lansing.

From its inception, the philosophy of the school has been that a well-balanced curriculum is the best preparation for a career in packaging. Candidates for Bachelor of Science degrees are required to complete courses in general education, mathematics, engineering, business and free electives, as well as in packaging. In addition, each student is required to compile 16 weeks of summer employment in the packaging field.

A total of 100 enrollments in the school is expected this fall. Indicative of the interest of such a school to young people is the fact that only two of the 156 men already graduated have gone into jobs other than packaging.

In the final analysis, postgraduate performance is the true indicator of the value of a school of packaging. What happens to a packaging graduate when he applies for a job in his chosen field? How quickly does he adapt to the job he was hired to do? What is his employer's evaluation of the quality of the work he is doing? What does the graduate himself have to say about the university training that prepared him for his present position? The answers to these questions will be revealed in the personal profiles you are about to read.

Summer job opens up a packaging career

In the normal course of job promotions, it's a long trek from junior technologist to department foreman. But it is a journey that was made in only 17 months by Dick Christensen of General Foods Corp.'s Carton & Container Division.

Dick's connection with the division goes back to 1956, when he was a packaging student at MSU. To fulfill the summer-employment requirement of the course, he took a temporary job with Carton & Container. "This experience," says Dick, "was the determining factor in selecting the area of packaging in which I wanted to work."

That his summertime job was the vital factor in discovering Dick's metier is testimony to the worth of this phase of MSU's packaging curriculum.

Dick was a sophomore in MSU's School of Engineering when he decided to transfer to packaging. He recalls that his basic interest in packaging technology was further whetted by "the challenge of learning about something I had not realized was so extensive, so old yet new, and changing so fast."

He graduated from the School of Packaging in 1957 and was immediately hired on a full-time basis by Carton & Container as a junior technologist. There followed a swift series of promotions, capped by his being named foreman of the corrugating department in October, 1958.

Dick Christensen of General Foods: a rapid rise to department foreman.

For six more postgraduate stories, turn the page →

Robert Ludwig of Chevrolet Motors: background for versatility.

A new packaging engineer handles many jobs

Robert F. Ludwig graduated from MSU's School of Packaging in the spring of 1958. He moved directly into a job in the packaging and research department of National Parts Distribution, an operation of Chevrolet Motors Div., General Motors Corp.

After Bob's first year on the job, his supervisor reports that he is progressing satisfactorily in a variety of assignments, including the development of packaging specifications for new parts.

Bob's college years were interrupted by a hitch in the Army. When he returned, his father told him of the MSU School of Packaging and encouraged him to enroll. The biggest benefits of the curriculum, as Bob sees it, are its scope and thoroughness. "It gave me a good packaging-engineering background," he says, "while at the same time permitting me to give plenty of attention to such interests as motion and time study and mechanical engineering."

Ray Brzezniak of AC Spark Plug: his education was equivalent to three years of experience.

'A graduate is prepared to deal with any problem'

"In a few months' time Ray Brzezniak was familiar enough with our products and organizational procedure to be of as much value to us as others who had two or three years' experience in this field."

This evaluation of package engineer Ray Brzezniak comes from his supervisor at the AC Spark Plug Div. of General Motors. Ray has been with AC for more than two years, ever since his graduation from the MSU School of Packaging with a B.S. in Packaging Technology. His duties at AC are varied. He shares responsibility in designing packages (including working out materials and packaging specifications) for more than 30 different products.

Summing up AC's opinion of the contributions made by its young package engineer, supervisor William Alguire says: "This is an ever-changing business, with new materials and equipment. We think Ray is qualified to help us maintain or even improve our position."

At MSU, Ray started as a major in electrical engineering, but later decided he wasn't interested enough in the course to make a career in that field. A fellow student suggested that he ask Dr. Goff about the then-new packaging curriculum. "After talking with Dr. Goff," he says, "I knew packaging was for me."

Like many other graduates of MSU's School of Packaging, Ray agrees that its balanced curriculum prepared him well for the job he now holds. In his own words, "The subjects are so diversified that a graduate is prepared to deal with sales, engineering, costs, production and other departments in any problem that may arise."

MSU training pays off in a demanding technical job

Reynolds Metals Co. has six MSU packaging graduates on its payroll. One of them is Leonard Bobier, who works out of the Los Angeles office as Western regional packaging sales engineer. He patrols an 11-state territory, helping Reynolds salesmen develop the technical side of a packaging sale.

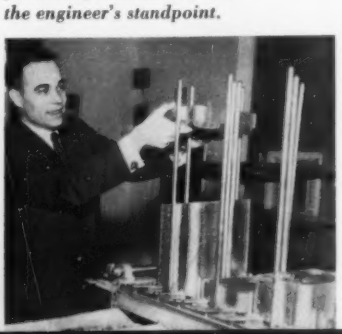
His employer says Leonard is doing an excellent job in a demanding assignment, made tougher by the growing complexity of packaging technology. His job, basically, is to present to customers and prospects the advantages of aluminum in packaging from an engineering view.

"We have found," Reynolds says, "that his training at MSU has enabled him better to evaluate the need for new packaging concepts and has stimulated his interest in packaging by giving him an appreciation of its scope."

Leonard was a sophomore in agricultural engineering when he heard of the new course. His interest awakened, he sought out Dr. Goff to learn the details.

The biggest values of the School of Packaging, Leonard says, are that it taught him to understand the language of packaging and that it gave him a thorough grounding in consumer, industrial and military packaging. "I believe such diversification is important to anyone connected with a company supplying packaging materials," he says. "My training has made me cognizant of the problems of our laboratory and other technical groups. It is easier to communicate with them."

Leonard Bobier of Reynolds Metals: promoting aluminum from the engineer's standpoint.



Versatility comes from a broad education

In his job as a packaging engineer for Dow Chemical Co., Robert J. Weber is responsible for developing and promoting the company's packaging-specification program. He correlates data among company divisions and subsidiaries, and works with other departments in establishing packaging standards. But that's not all. He develops new packages or modifies existing ones as the need arises.

Dow reports that Bob handles these varied responsibilities with the aplomb of a veteran, although he has been with the company less than three years. He was hired, says Dow, because he possessed all the requirements for the job: "formal engineering training, knowledge of package standards and manufacture."

Bob himself credits the curriculum offered by MSU's School of Packaging for his success with Dow, which is documented by the increasingly important jobs he is shouldering in the company's packaging department. "We package consumer and industrial products, utilizing a multitude of package types and materials," he says. "With this type of packaging program, the broad background provided me by the MSU packaging course is invaluable."

Robert Weber of Dow Chemical: he had all the requirements.

John O'Hara of General Electric: container design is a constant, complex packaging problem.

He 'cradles' military electronic equipment

As a packaging engineer in the heavy military electronic equipment department of General Electric's Defense Electronics Div., John O'Hara is termed "a great asset" by his supervisor. His duties include the development of containers that must guarantee safe transport of such diverse (and bulky) military equipment as missile-guidance systems, underwater-detection equipment and radar.

The packaging problems are complex. John's responsibility is to give the military services the level of protection they demand at the least possible cost, cube and weight. To do this, he must keep abreast of the latest developments in packaging materials and equipment, and be able to adapt them wherever possible.

Container design is a contant problem. Each piece of electronic equipment is a challenge, requiring individual attention to determine the container design and cushioning that will do the job best.

John reflects what is probably a unanimous opinion among MSU School of Packaging alumni when he says its balanced curriculum armed him with the requisites for a successful careeer.

The school's requirement that every candidate for graduation must take a summer job in some phase of the field is singled out by John as a vital asset to the course.

A packaging engineer meets the space age

Little more than a year after joining Douglas Aircraft Co.'s Santa Monica Div., packaging engineer James A. Riddle was assigned major responsibility for the complex packaging phase of the company's vital Thor missile program.

Riddle's rapid rise in the company's packaging group, says Douglas, "is due in large part to his training at MSU's School of Packaging." Jim was hired immediately after his graduation in 1956. He was instrumental in the establishment and growth of a materials-research laboratory for packaging. The company credits him with making important contributions to the development of its knowledge of cushioning materials and system designs.

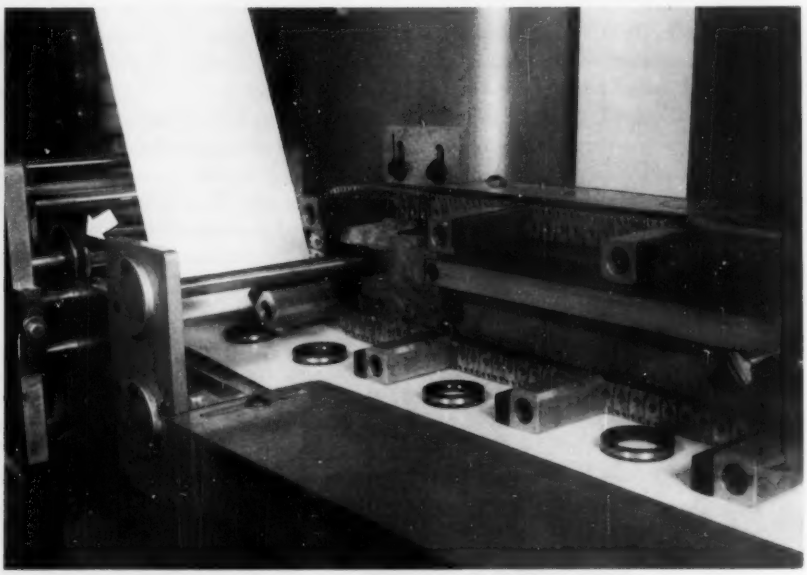
Late in 1957, Douglas decided that the magnitude of the packaging effort required for its Thor missile program demanded that it be put under the direction of a top packaging engineer. The company had no qualms in handing the job to Jim.

James Riddle of Douglas Aircraft: top man in a missile-packaging program.

PHOTOS CHRYSLER CORP.

Cohesive sealing

Only manual job *required on each of two new machines for cohesive-paper packaging is placing of parts on adhesive side of the bottom web. (Printed side faces down.) Sealing to second web and package cut-off are automatic at far left.*



Traveling web, *with parts laid in position between adjustable spacers, moves from right to left through Machine "A" for contact with the upper web of cohesive paper (coming down at left). The two then run under rollers (arrow), which pressure seal their side edges.*

Thanks to new automatic machinery and improved handling characteristics of the material itself, cohesive paper appears ready to fulfill the packaging potential predicted for it a decade ago.* At the time, the big stumbling block was lack of equipment to handle cohesive paper speedily and economically in large-scale operation.

This problem now appears to be licked. Today the Service Parts & Accessories Supply Div., Chrysler Corp., which sells under the "MoPar" brand name, is daily turning out some 22,500 items packaged in cohesive paper, using two types of cold-sealing machine designed expressly for running this packaging material. Packaging speed is many times what it was in the former all-manual operation.

Although the two machines (designated as "A" and "B" for the purposes of this article) produce the same basic type of package, their operation and the type of product they handle are different. Except for loading, both units are automatic.

Machine "A" is used for relatively long runs of small, equal-sized parts. Items are manually placed and mechanically spaced on a web of cohesive paper (cohesive side up), which is then run under a second web (cohesive side down). The two are side sealed by gentle pressure and the filled tube is cut into equal-sized packages, end sealing being done simultaneously with the cutting operation. Packaging speeds average 55 per minute for a 4-in. part, the company's most common size.

Machine "B" is not so fast as "A," but it is more flexible. It handles irregular objects of varying lengths, such as seat-adjusting cables, clutch disk plates and 140 different types of molding. Its web set-up is much like that of machine "A." Major operating differences are that machine "B" accommodates varying product sizes on the same web and that all four package edges are sealed simultaneously by sponge-rubber rollers.

The packages produced by these machines make no claim to glamour. But they are neat, inexpensive, colorful, protective and clearly identified as to brand name and function. There is an over-all repeat pattern of the MoPar name and trademark on the surface of the package, which is the same for every product; the contents and part number are stamped on the plain back surface.

*See "Cohesive Papers," MODERN PACKAGING, Nov., 1951, p. 82.

goes automatic

Chrysler parts get airtight packaging without glue or heat sealing, using paper with the coating that sticks only to itself, run on two new continuous machines flexible enough to handle 22,500 products

End of line *is cut-off knife, whose shoulders simultaneously seal back edge of delivered package and front edge of succeeding one. Parts identity is imprinted automatically on upper web as it travels through machine.*

Altogether, the advantages to Chrysler of mechanized packaging in cohesive paper are impressive:

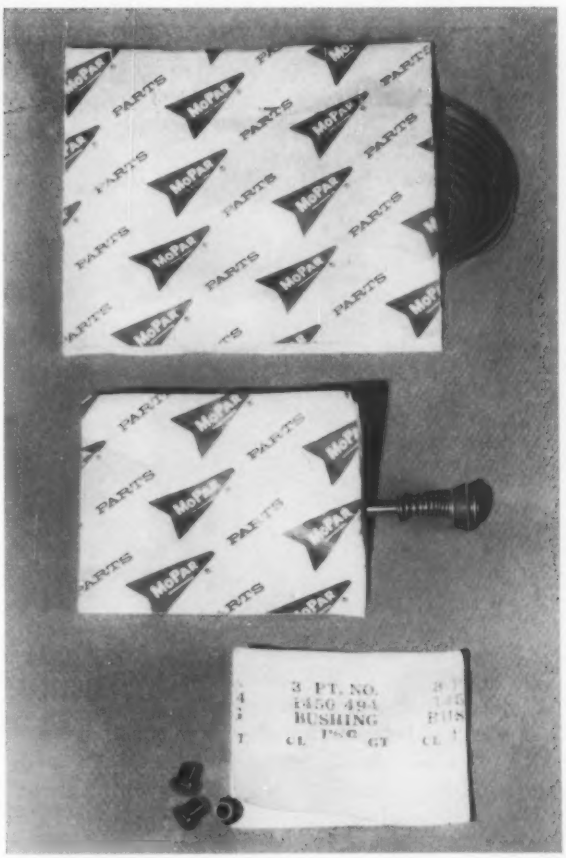
1. Labor savings of 70% and more over the previous hand method, at about the same materials cost as for tubes and envelopes previously used.

2. Fewer packaging materials needed. Chrysler's cohesive-paper packaging calls for only seven different paper-roll widths, compared with dozens of sizes of kraft tubing, sulphite and kraft envelopes formerly stocked.

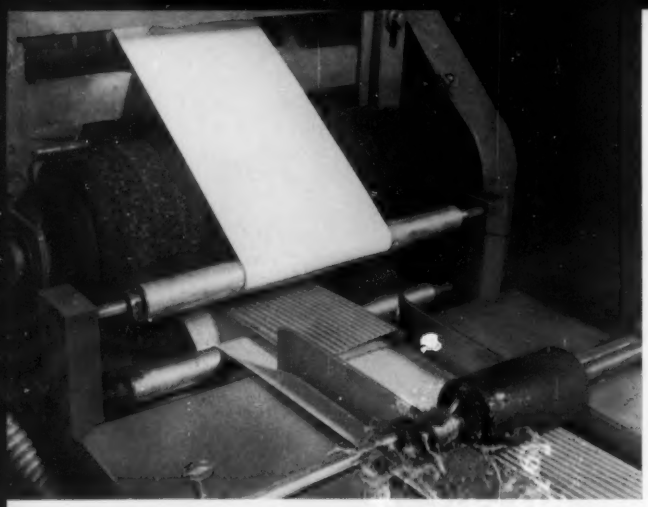
3. Extreme flexibility. The machines can package parts having hundreds of different sizes and shapes —at 10 min. or less change time, in some cases with no machine adjustment at all.

4. Faster servicing of dealer orders. Higher production speed allows quicker delivery and helps keep dealers happy. So does the improved product protection given by the cohesive paper, which prevents parts from shifting in the package.

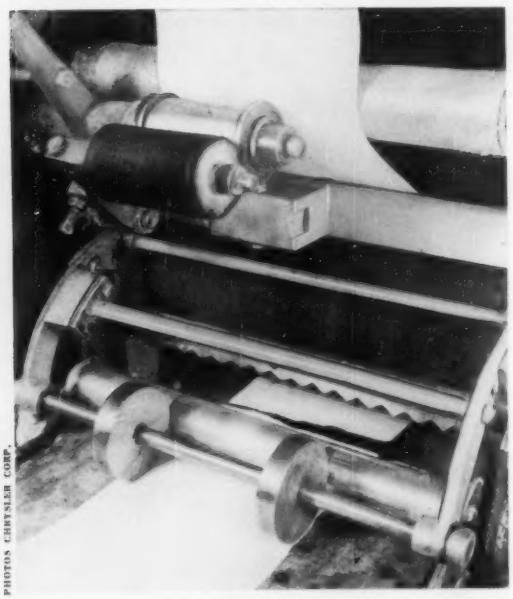
5. Opportunity for more in-plant packaging. Chrysler still packages only 40% of parts sold under the MoPar name, the others being packaged by the suppliers who manufacture them. But since initiating its automated packaging operation, Chrysler's in-



Simplified packaging *for Chrysler's "MoPar" accessories is achieved at huge savings in labor costs. Only seven widths of paper, requiring neither glue nor heat sealing, are needed for entire line. Here are three typical packages. Parts data are automatically imprinted on reverse side of packages.*



Machine 'B' *is used to package long or irregular parts. Different-sized parts can be placed on the same web. Fragile items require corrugated folders for added protection. Sandwiched between two webs of cohesive paper (above), the part passes between sponge-rubber rollers which pressure seal the package all around the contents. On the other side of twin rollers (below), a sensing device actuates knife so packages of varying sizes can be cut apart accurately as they emerge. The imprinting device is at upper left in bottom photo.*



PHOTOS CHRYSLER CORP.

plant percentage is rising steadily, for added economies and better control of package quality.

6. Closer family resemblance for MoPar packages. The former wide range of packaging materials and printing methods was confusing to plant personnel and customers alike.

Chrysler's Service Parts & Accessories Supply Div. packages and warehouses some 80,000 part numbers in any one year. Parts are kept in stock for all current-year motor-vehicle models as well as older models. They range from small oil seals to such unwieldly items as moldings and grille screens.

Until the switch to cohesive paper, Chrysler had used many different types of packaging materials, dictated by product size and weight. Most long or irregular parts went into kraft tubing. Such delicate parts as cork or thin rubber gasket assemblies went into kraft envelopes with a corrugated filler for protection. Smaller parts went into bleached sulphite envelopes with pressure-sensitive flaps. The entire packaging operation was manual.

Improved cohesion

The principle of all cohesive papers is the same: a special coating, usually latex based, which sticks instantly and permanently to itself and to nothing else. The cohesive paper Chrysler is using is a bleached 50-lb. kraft with a membrane-like coating of latex on one side. It differs from earlier types of cohesive papers mainly in its heavier weight and in the formulation of the latex coating, which gives a stronger bond. Both improvements have made the paper more suitable for industrial use. But not until the supplier added a release coating to the non-latex side of the sheet was cohesive paper practicable for automatic and semi-automatic packaging. The release coating allows the paper to unwind smoothly from the roll at high speeds.

Chrysler won't reveal how much it spends for cohesive paper. But such materials are usually quoted at from ¾ of a cent to 1½ cents per square foot, depending on grade of paper, color, printing, etc. Chrysler's surface sheet is flexographically printed in red and yellow.

Machine 'A'

Chrysler's new automated packaging line consists of four cold-sealing machines, two "A" and two "B" types. In Machine "A," a series of adjustable spacer bars on a continuous-loop chain conveyor controls the spacing of parts on the web of paper, which serves as its own conveyor belt. The bars also actuate package cut-off. The speed at which the bottom web moves under the spacer bars can be regulated to suit the product being loaded.

As parts are being loaded onto the moving bottom web, an upper web of unprinted cohesive paper (which becomes the bottom of the package) feeds laterally to a point above [*Continued on page 209*]

SUPPLIES AND SERVICES: "Spot-Seal" latex-coated kraft paper by Sherman Paper Products Corp., Newton Upper Falls, Mass. Machine "A": Roto Wrap Model 500 cold-sealing machine by Roto Wrap Machine Corp., Englewood, N. J., distributed by Conapac Corp., 120 E. 13 St., New York 3. Machine "B": Packmaster Model 56 cold-sealing machine with extra table section by Sunstrand Machine Tool Co., Ann Arbor, Mich.

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Technical & Engineering

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Flexible packages for processed foods

Quartermaster studies show that certain film laminates with foil give adequate performance in commercial thermal processing and in protection of contents over long term. By Robert G. Keller*

Utilization of plastic materials for food packaging has increased phenomenally in the last several years. Many new applications, made possible by recent material developments, have greatly extended the potentials of the plastic package. For example, boil-in-the-bag frozen foods have greatly increased the convenience value of frozen foods. The development of a flexible package that could withstand commercial sterilization processes would be of even greater importance, especially for the Armed Forces feeding program.

The logistical gain to the Armed Forces, if it were possible to develop a flexible package as resistant to thermal processing as the metal can, would be substantial. By substituting flexible packages for the metal cans presently employed in the Army's individual combat meal, a weight reduction of 29% and a cube reduction of 26% could be effected without any change in the quantity of food included. In other words, the package itself would provide the reduction (see Figure 1).

This means that the highly mobile soldier of tomorrow could carry less bulky and lighter rations. Other benefits of flexible materials include the greater ease of opening, the adaptability of package to product shape and quantity, a significant reduction in process time (and improved acceptability in some instances), faster reheating and the small volume of the empty package—a factor in manufacture as well as disposal at the site of consumption.

The objectives of experimental work performed at the QM Food & Container Institute for the Armed Forces were (a) to develop a flexible packaging system for heat-processed foods, (b) to evaluate various techniques for heat sterilization and (c) to determine the effects of storage and handling on the shelf life of the contents.

It was determined early in the investigation that to be satisfactory for heat-processed food, three prime physical properties are required for flexible package materials:

1. Resistance to sterilization temperatures.
2. Sufficient impermeability to gas and moisture to prevent deterioration in storage.
3. Mechanical strength sufficient to maintain a

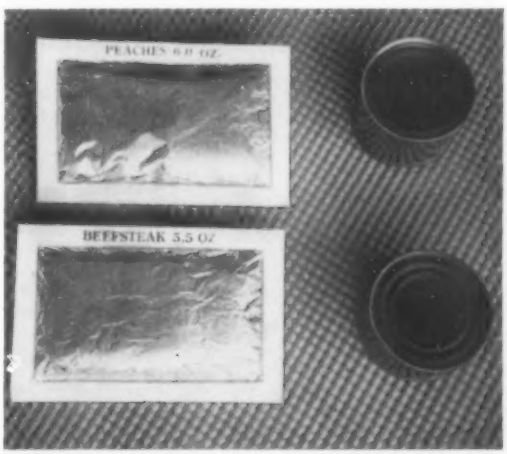


Figure 1. *Substitution of flexible packages for canned items simplifies ration design. Portions are not necessarily tailored to fit available can sizes.*

*Container Div., Quartermaster Food & Container Institute for the Armed Forces, Quartermaster Research & Engineering Command, U. S. Army, Chicago.

Table I: Materials used in relation to properties studied

Material	*Process temperature resistance*	*Permeability*		*Remarks*
		Gas	*Water vapor*	
Polyethylene, low density	Fair	High	High-med.	Low density is subject to degradation with fat-containing foods above 230°.
Polyethylene, med.-high density	Good	High	Med.-low	Higher-density materials less able to withstand flexing.
Polyvinylidene chloride (saran)	Subject to shrinkage	Very low	Low	Delaminates in foil combinations unless pre-shrunk.
Pliofilm	Subject to shrinkage	Low-high	Med.-high	Poor flavor characteristics.
Nylon	Good	Low	High	Seal area subject to fracture.
Cellulose acetate	Good	Med.-high	Very high	Used only outside in combination with foil.
Videne (polyester)	Poor, low softening temperature	Low	High	Used only inside in combination with foil.
Polyvinyl chloride	Good	Med.	High	Certain plasticizers impart objectionable flavor characteristics. Cast film or coatings less subject to shrinkage.
Perfluorocarbon resin	Good	Low	Very low	Difficult to seal, good flexibility.
Polypropylene	Good	Med.-high	Med.	Application similar to polyethylene.
Polyethylene terephthalate (polyester)	Good	Low	Med.	Seal areas subject to fracture when used alone.
Polytrifluorochloroethylene	Good	Low	Very low	Seal areas subject to fracture when used alone.
Foil laminations and coatings	Dependent on material	Negligible	Negligible	Greatest potential. Non-oriented films or films not subject to shrinkage help control delamination.

hermetic seal and commercial sterility standards.

Work previously conducted on flexible packages for processed foods showed their promise, but indicated a few areas where further research is necessary. Thus, in reports on the work conducted at the University of Illinois by Hu, et al., in 1956 and earlier (1, 2)† it is stated that films having extremely low oxygen and water-vapor transmission rates and greater strength were necessary before practical application of film containers could be achieved. Fortunately, new materials have been developed that possess the properties desired. The film specifications which may be found in the chart entitled "Properties of Packaging Films" in MODERN PACKAGING's *Encyclopedia Issue* (7) suggest almost limitless variation of properties when used in combination in the form of a lamination.

Among the flexible materials which have merited increased application in recent years are film combinations containing aluminum foil (5, 9). Experimental studies on such a film-foil combination, using hot-filled juices, have indicated its effectiveness (6).

The present paper reports data indicating the feasibility of using foil-laminated packages for processed foods. Although the data obtained suggest that many film materials have the necessary potentials for withstanding sterilization temperatures when used alone, foil laminates offer more encouragement since these materials also offer a solution to the permeability problem.

Experimental

Materials. The materials used in this study were, as mentioned, evaluated alone or in combination. These materials were chosen for their physical and chemical properties as they relate to thermal processing. In general, the high melting point and mechanical strength of these polymers are attributable to their high molecular weight.

It is realized that different forms of many of these materials are known which may affect their use alone or in a lamination; for example, branched or low-density polyethylene vs. linear or medium-density polyethylene. Low-density polyethylene has greater flexibility, while higher-density or linear polyethylene has greater temperature resistance, more stiffness or brittleness and is somewhat less permeable. Another example is oriented vs. non-oriented polyethylene terephthalate (polyester) film. Oriented film is self-supporting and has greater flexibility, but is not suited for use in laminations for heat-processed foods because it is subject to shrinkage at process temperatures. Table I is a tabulation of films investigated, with general comments concerning temperature resistance, permeability, etc.

†Numbers in parentheses identify References appended.

Retort processes. Packages containing 4 oz. of meat product with varying amounts of "head space" were sealed and subjected to different processes. In each case the packages were processed at 250 deg. for 15 min. Conventional steam cook with and without 15 p.s.i. pressure cooling was tried. Conventional pressure water cook with and without overriding air pressure of 10 p.s.i. (total pressure 25# gauge) and pressure cooling was also tried. Atmospheric hot-water cook was attempted for 6-oz. packages containing fruit product. The laboratory set-up is shown in Figure 2.

Heat penetration. Five-and-one-half-ounce packages of beefsteak were prepared in order to obtain heating characteristics of the package. The $\frac{5}{8}$-in. steaks were seared in an open pan and sealed in 4½-by-7-in. packages of vinyl-foil-polyester under 25 in. of vacuum. The packages were fitted with thermocouples in a manner similar to the method used for cans. Replicate heating curves were obtained at 250, 240 and 230 deg. F. steam process with pressure cooling.

Material screening and permeability. Screening of various package materials was accomplished by actually packaging either diced beef with broth for the steam process or fresh-frozen peach slices for the hot-water process. Packages which withstood conditions were prepared in sufficient numbers for study and stored at room temperature. Precaution was used to store the transparent materials in darkness to eliminate the possible effect of light on the product. As a result of some of the screening tests, 5½-oz. beefsteaks were vacuum packaged in pouches fabricated from three films: 2-mil polyethylene-polyester, 2.5-mil perfluorocarbon and 1-mil vinyl-0.35-mil foil-1-mil polyester. The packages were processed at 250 deg. F. except the 2-mil polyethylene-polyester, which was processed at 230 deg. F. Twenty packages of each variable of processed steaks were stored at 70 deg. and weighed perodically to determine moisture loss.

Control pack (peach slices). Three hundred flexible packages containing 6-oz. of processed peach slices were compared with an equal number of can controls. The packages used for this study were formed on an automatic "Simplex" bag maker. The material was a laminate consisting of 1-mil vinyl-0.35-mil foil-1-mil polyester. Cans were 300 x 200 size, plain hot-dipped bodies with enameled electrotin ends.

Freestone peach slices were obtained fresh frozen in 30-lb. cans. They were frozen in 10 deg. Brix syrup containing 0.2% ascorbic acid. The slices were allowed to thaw at 40 deg. over two days. Sufficient 40 deg. Brix syrup was added to result in a cut-out Brix of about 30 deg. No additional ascorbic acid was added. Peaches were hand packed into cans and packages. Envelopes and cans were sealed under 20 in. of mechanical vacuum, processed in hot water to a center temperature of 195 deg. F. and allowed to air cool. Center temperatures were determined by means of an armour-piercing thermometer. Cans and packages were coded and placed under constant-temperature storage at 70 and 100 deg. F. Periodic withdrawals were scheduled for acceptance evaluation and package examination.

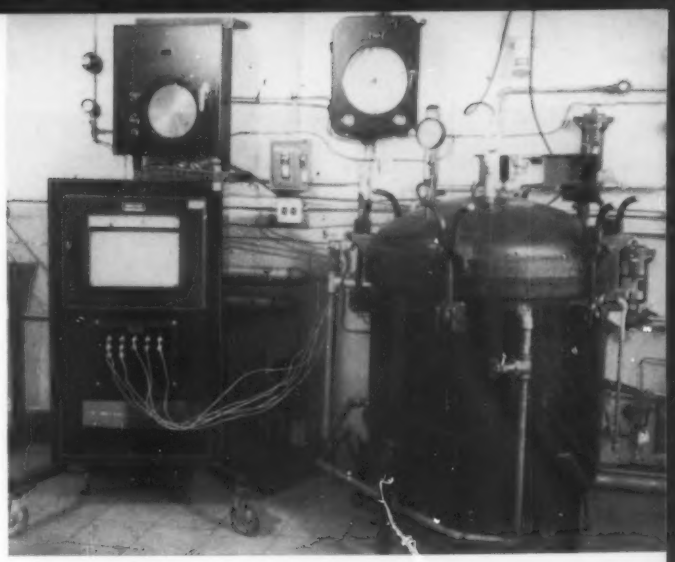
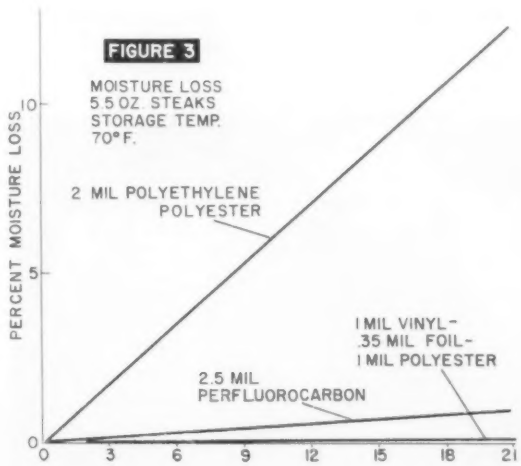


Figure 2. *Conventional retort is satisfactory for processing flexible packages. Shown is a laboratory-scale retort in which studies were conducted. Heat-penetration data were obtained using multipoint temperature recorder, also shown.*

Results and discussion

Retort processes. Although commerical processing methods are feasible for flexible packages, it was observed that if the head-space air is not substantially removed from the package, a commercial pressure water cook (similar to a process for glass) with



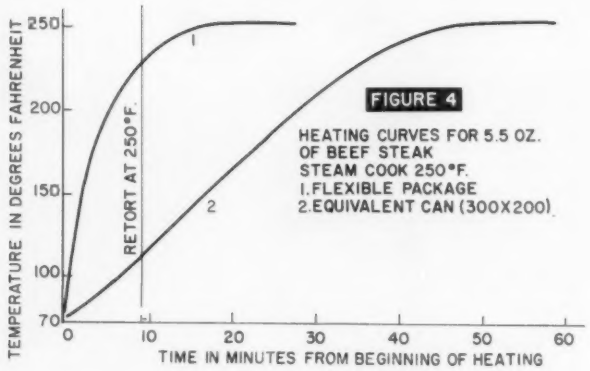


FIGURE 4

HEATING CURVES FOR 5.5 OZ. OF BEEF STEAK
STEAM COOK 250°F.
1. FLEXIBLE PACKAGE
2. EQUIVALENT CAN (300X200)

pressure cooling must be employed. This requires a superimposed air pressure to prevent expansion and possible bursting of the packages and to insure proper heat transfer. This superpressure is maintained during the cooling cycle. However, if the major portion of head-space air is removed by vacuum closing, or other means, a conventional steam process with pressure cooling is satisfactory.

Food requiring only a hot-water cook may be processed at atmospheric pressure provided air has been substantially removed from the package.

Heat penetration. Process times for the 5½-oz. beefsteaks at the various temperatures are shown in Table II.

Screening and permeability. The materials found to be less than satisfactory alone or in combination because of lack of heat resistance to steam-process conditions include low-density polyethylene (for fat-containing foods at temperatures of 240 deg. F. and over), saran, Pliofilm and Videne.

Single films and combinations of reasonable thickness considered unsatisfactory, because of oxygen permeability, for color-sensitive foods include polyethylene, perfluorocarbon, polypropylene, polyester, polytrifluorochloroethylene and polyamides (nylon). Objectionable discoloration of peach slices occurred in one to three weeks of storage at room temperature in packages made from these films.

Poor flavor characteristics were demonstrated for Pliofilm by tasting water processed in packages made from this film.

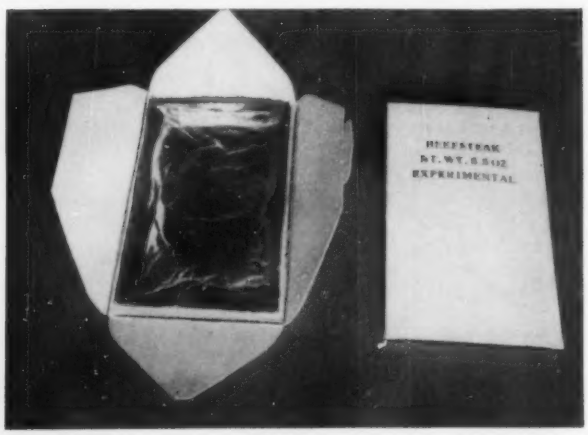
Moisture loss for the packaged steaks stored at 70 deg. F., expressed in terms of per cent of original weight minus package weight, appears in Figure 3.

A comparison of the moisture loss from the packaged steaks with reported water-vapor transmission rates from the literature is presented in Table III.

Control pack (peach slices). A consumer-type panel of 40 people rated the four variables periodically, using the hedonic scale where one is "dislike extremely" and nine is "like extremely." The results of these evaluations may be found in Table IV.

No evidence of product attack on the inside of the flexible package was observed at the 6-months' examination. A trace of detinning was noted on the plain surfaces of the can interiors. These evaluations are scheduled for one year and are being continued.

Figure 5. *Photo shows one method of improving abuse resistance of a processed pouch. Paperboard folder reduces flexing of the seal areas, thereby reducing the possibility of fracture.*



Evaluation

A summary of the observations made will serve as the best means of defining the status of flexible packages as potential containers for processed food. Actual process condition will vary with package, size, fill, temperature, head-space volume, process temperature and pressure considerations. The important dissimilarity between the flexible package and the can is the former's lesser ability to withstand an outward pressure differential, especially at elevated temperatures. While smaller can sizes can easily withstand the total pressure development during processing when cooled at atmospheric pressure, the flexible package will burst under similar conditions. Experimental work was limited to small numbers of packages laid in the bottom of the retort crate. Provision is necessary for supporting individual packages for full retort loads in order to allow proper heat penetration.

Heat penetration into the flexible package presents no great problem. It is, in fact, considerably more rapid than for an equivalent can. Figure 4 shows

Table II: Process schedule for 5.5-oz. steaks in flexible materials—initial temperature, 70 deg. F. ($F_0 = 6$)

Process temperature	*Process time*
250 deg. F.	15 min.
240 deg. F.	35 min.
230 deg. F.	60 min.

Table III: Actual weight losses vs. reported WVTR

	Average Weight Loss 21 weeks		Reported* WVTR
	gms.	*%*	
1. 1-mil vinyl-0.35-mil foil-1-mil polyester	0.05	0.05	0.001†
2. 2.5-mil perfluoro-carbon	1.14	0.89	0.091**
3. 2-mil polyethylene-polyester	15.38	12.1	0.358

*Values are gms./24 hrs./100 in.² at 100°F. and 90% R.H.
†Value reported is for 0.5-mil vinyl-1-mil foil-0.5 mil polyester.
**2-mil polytetrafluoroethylene.

Table IV: Acceptability of processed peach slices

	70 deg. storage		100 deg. storage	
Examination	*Cans*	*Flexible packages*	*Cans*	*Flexible packages*
Initial	7.4	7.2	7.0	7.0
1½ months	6.9	7.5	7.1	6.9
3½ months	7.0	7.0	6.7	6.7
6 months	7.2	7.5	7.0	6.6

heating curves for 5.5-oz. of steak packaged flat in a flexible package compared with curves for the same amount of steak packaged in a 300-x-200-size can. No external support was found necessary to maintain the thermocouple position in the relatively solid product. Although formula methods were not originally developed for flat pouches, the conditions for use of the method were fulfilled and process times were calculated by formula. Process time at 250 deg. F. for 5.5-oz. of beefsteak in a 300 x 200 can is 55 min., compared to 15 min. for the flexible package as shown in Table I. Similar reductions in process time can be anticipated for other products where heat transfer is essentially by conduction.

The list of materials found to be unsatisfactory for heat-processed foods by far outweighs those that have promise. Moreover, some of these materials exhibit poor mechanical properties in the finished package because of their crystalline nature or orientation. There is a tendency in some cases for fracture to occur adjacent to seal areas, which causes leakage. This is true of single films of higher-density polyethylene, polyester and perfluorocarbon resin. Low-density polyethylene alone or in combination was not satisfactory for processed steaks at 240 deg. F. or above. Degradation of the film and breakdown of the laminate occur in the presence of fat-containing foods.

For package use, the permeability data available for sheet materials from the literature can be compared only after tolerable levels for specific package applications have been determined. The permeability study at the Institute was limited to comparative performance rather than objective measure. Oxygen permeability of most single films is so rapid that browning of peaches or discoloration of apple sauce occurs in a matter of days after packaging and processing. By using a color-sensitive food packaged and processed in various materials under identical conditions, the color change is a relative measure of oxygen permeability. Packages made from single films, including the polyethylenes (0.915 to 0.940 density) up to 4 mils thick, 6-mil polypropylene, 3-mil polytrifluorochloroethylene, 2.5-mil perfluorocarbon resin, 2-mil polyester and 2-mil nylon all showed objectionable discoloration within three weeks at room temperature. In contrast, laminates including foil have not shown objectionable discoloration after six-months' storage at 100 deg. F.

Figure 6. *Ease of opening is a desirable feature of flexible food packages. Package shown is a pouch backed and framed with paperboard to improve abuse resistance. Perforation of the backing and notched pouch make it easy to tear open.*

Even on the basis of the limited organoleptic study made on the packaged steaks, it is evident that the foil-laminated package is useful in offsetting the development of oxidative flavor changes and moisture loss. At the end of 21 weeks, one flexible package of each of the materials was opened and examined for odor and flavor. The foil laminate was the only package variable which preserved the meat in an edible condition. The steaks packaged in the two other variables (polyester and perfluorocarbon) had a pronounced "soapy" odor and were not considered edible. No bacterial spoilage was evident. The greatest success for steam and water process was with a laminate of food-grade vinyl or polyethylene (inside), foil, acetate or polyester (outside).

It is concluded that no film or laminate will possess the ultimate properties for all foods, although the materials under use are considered the most versatile for present considerations. Considerable variation in performance [*Continued on page 235*]

Improved pliability tester

Further research at Picatinny Arsenal results in an instrument capable of 97% accuracy in measuring the wrappability of flexible military-specification materials.

By Mario E. Gigliotti and Howard M. Weiner†*

In July, 1955, MODERN PACKAGING published an article on the development of a tester for pliability (1).[1] This article told of the conception of a tester that would quantitatively determine the pliability or wrappability of flexible wrapping materials, the construction of a prototype instrument, its evaluation for reliability and reproducibility, and a series of tests that established correlation between values obtained on the tester and actual wrappability of materials as determined by the ranking of selected test materials by experienced packaging personnel.

While the program described in the previous article indicated that the tester showed great promise and represented a true and accurate measure of the ease with which a sheet of flexible material can be handled and molded to conform around an object being wrapped, it was felt that some additional work needed to be done before the military could unequivocably accept the tester.

First, the original instrument was a prototype, designed to determine if the principles of such a device could be translated into a tester. As such, the original instrument was oversized and heavy, involved a rather elaborate system of calibration, contained a gauge-reading system that was difficult and had several other minor drawbacks.

Secondly, the original program consisted of the evaluation of some 70 greaseproof, flexible barrier materials under Military Specification JAN-B-121 and this specification has been superseded by MIL-B-121A. It was felt that the newer types of wrappers should be evaluated prior to the establishment of specification requirements.

Finally, the original project produced rather conflicting data on the effect of aging on pliability. More data were desired to resolve this conflict.

For these reasons a program was initiated to:

1. Production engineer the prototype tester to make it more streamlined and suitable for general laboratory use.
2. Assess the newer materials now available under Specification MIL-B-121A.
3. Determine the effect of aging on pliability.

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[1]Numbers in parentheses identify References appended.

Concept

The original concept of a pliability-testing instrument was based on the assumption that the only real indication of pliability would be that obtained by simulating the actual conditions of wrapping a barrier material around an item or package and measuring the resistance to this simulated wrapping operation. The instrument should be able to measure the force required to flex the material in all directions simultaneously, in the general manner of crumpling a wrapping material about an object. It was therefore conceived that this possibly could be accomplished simply and accurately by measuring the force required to push a flat sheet of material through a circular ring by means of a plunger with a hemispherical head. In such an action the plunger would carry the specimen sheet through the ring and the material would, in turn, be forced around the plunger head in a manner similar to wrapping that surface. The force exerted by the head in accomplishing this work would be a measure of the effort required to wrap the material and could be indicated directly in pounds on a gauge.

Preliminary engineering studies were made of the means of accomplishing the above three basic objectives and it was concluded that the circular ring of the new tester, unlike the prototype instrument, should be fixed and that readings should be taken off the moving piston head. This would eliminate the elaborate counterbalance system used in the research prototype. In addition, it was felt that if a mechanical linkage were used to obtain readings, rather than a hydraulic linkage, a source of unreliability could be eliminated.

With this approach in mind, three alternate designs of a modified instrument were considered:

(A) One alternate was to mount the circular ring in the cabinet top and to hinge the cabinet top along

its rear edge in such a manner that readings could be obtained by measuring the amount of upward movement of the front edge of the cabinet top. The weight of the cabinet top would be counterbalanced by means of an adjustable spring at its front edge. This concept had the advantage of simplicity, but it was believed that accurate counterbalancing and accurate readings would be difficult to obtain. The slight angular rotation of the cabinet top also raised questions as to the accuracy and consistency of the readings. In addition, calibration of the instrument offered a difficult problem.

(B) One concept was developed in which the circular ring would be fixed in the cabinet top and readings would be taken from the piston and head. The hemispherical piston head would be spring mounted on the piston shaft and the displacement of the spring would provide a measure of the force in pounds. The main disadvantage of this alternate was the elaborate mechanical linkage required accurately to transfer the amount of displacement of the piston head to a fixed dial mounted in the face of the cabinet. The electrical and hydraulic linkages were discarded as being too costly and too inaccurate.

(C) A third alternate was proposed in which the circular ring would be mounted in the cabinet top and the piston head would be spring mounted to the piston shaft as above, but the gauge would be mounted on the piston shaft and permitted to ride up and down with the piston movement. The gauge would disappear from the view of the instrument operator and would attain its maximum reading near the top of the piston stroke. The gauge would return to view as the piston returned to its normal lowered position and a maximum-reading needle would indicate the pliability reading in pounds. It was felt that this concept would meet all of the stated objectives and would result in a simple and reliable design with a minimum of moving parts. Calibration would be simple and accurate. The only disadvantage seemed to be a psychological one, since it might be considered unorthodox for the instrument to have a moving gauge.

Alternate design (C) as described above was selected by the Picatinny Arsenal, for whom the pliability tester was developed and the modified instrument (see Figure 1) fabricated.

Figure 1. *New, compact pliability tester has circular opening for specimens in cabinet top. Piston head below is spring mounted to piston shaft. Gauge with maximum-reading needle is mounted on piston shaft and rides up and down with the piston movement, returning to viewing position in front of cabinet on completion of the test cycle.*

Table I: Typical barrier materials selected for testing

Material No.	*Description*	*Grade*	*Type*	*Class*
8	Polyethylene-coated kraft, flat	A	I	1
20	Kraft and cellulose acetate film, creped	A	I	2
28	Kraft and cellulose acetate film, creped	A	II	2
36	Polyethylene-coated kraft, creped	A	II	1
50	Polyethylene-coated kraft, flat	A	II	1
N-1	Kraft and polyester film, creped	A	II	2
N-6	Kraft and polyester film, creped	A	I	2
N-7	Kraft and polyester film, creped	A	II	2
N-9	Scrim and cellulose triacetate film, waxed	C	I	2
N-18	Scrim and polyester film, waxed	C	I	2

Testing of instrument

At this stage of the instrument development, tests were run on 20 typical barrier materials to study the accuracy, consistency and reliability of instrument readings. Ten of these materials are identified in Table I.

Samples of these typical barrier materials were conditioned for a period of one week at 73 deg. ±2 deg. F. and 50 ±5% R.H., and circular test specimens were cut 10 in. in diameter. Ten specimens of each of the materials were tested, five with the greaseproof side up and five with the greaseproof side down. This testing procedure also provided that

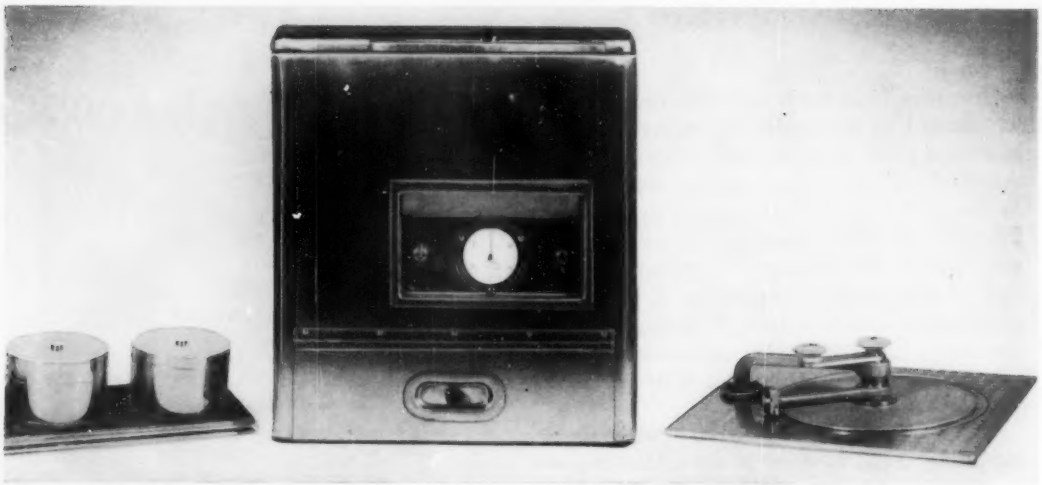

Figure 2. *Specimen cutter which provides uniform samples for testing is shown at right of cabinet. Calibrating weights may be seen at left.*

where a reading deviated from the average by more than 25%, a second reading would be taken.

In performing these tests, the samples are cut out by means of the specimen cutter (Figure 2) and placed in the cabinet beneath the fixed ring. By action of a motor, the hemispherical piston head rises through the ring and carries the specimen upward. As the specimen passes through the ring, the force necessary to wrap it around the piston dome is recorded on the gauge. This value is the pliability.

Table II gives the instrument readings for the same 10 materials listed in Table I, as representative of the group. The readings taken with the greaseproof side up have been listed separately from readings taken with the greaseproof side down, for ready comparison. In this table, readings for groups of five specimens have been averaged so that these averages may be compared. The deviation of each reading from the average reading for a group of specimens is also shown. In addition, the table lists the per cent deviation of each reading from the average of a group of specimens, together with the average per cent deviation of the group. By obtaining the sum of the absolute values of the deviations for each group, probable error has been computed.

The probable error in the average of a given number of pliability readings, when compared with the material's actual pliability, can be calculated by the "method of least squares" from the following expression:

$$e = \frac{0.8453}{n\sqrt{n-1}} \sum_{1}^{n} |R_n| \quad . \quad . \quad . \quad . \quad . \quad (1)$$

Where e = the probable error in the average reading;

n = the number of readings; and

$|R_n|$ = the absolute value of the nth reading.

Since five readings of a particular material in a particular direction were taken, the probable error in the average reading for these tests is:

$$e = 0.0845\ [|R_1| + |R_2| + |R_3| + |R_4| + |R_5|] \quad (2)$$

It is apparent from Table I that individual pliability readings for some of the barrier materials show deviations which seem to be a significant percentage of their average reading. Some individual readings deviated by as much as 25% from the average reading of a group of specimens. It was therefore necessary to consider the sources of these deviations and to analyze the accuracy which can be obtained by testing several specimens of each material. The principal sources of deviation in the pliability readings are: lack of quality and uniformity in the manufacture of barrier materials; random pleating of the specimen as its passes through the circular ring; temperature and moisture content of the barrier-material specimens; friction between specimen and the inner surface of the circular ring; a minor amount of friction and drag in the linkage between the piston dome and the dial gauge and within the gauge itself, and human error.

The effects of temperature and moisture content of the barrier material are eliminated by conditioning and testing specimens under controlled temperature and humidity. Friction and drag within the instrument are negligibly small compared to the acceptable range of pliability values. Human error has been eliminated by a completely automatic cyclic operation, an easily read maximum-reading gauge needle, a specimen cutter to cut identical samples and a standard operating procedure. Friction between the barrier material and the circular ring could be controlled, if this was believed to be desirable, by overlaying the specimen with a thin and

Table II: Typical pliability readings used in determining accuracy of pliability tester

Material No.	Specimen No.	Instrument readings (lbs.)		Deviations from average reading (lbs.)		Per cent deviation		Probable error (lbs.)	
		Up*	Down†	Up*	Down†	Up*	Down†	Up*	Down†
8	1	5.9	5.2	0.0	0.2	0.0	3.7		
	2	5.7	5.6	0.2	0.2	3.4	3.7		
	3	5.8	5.8	0.1	0.4	1.7	7.4		
	4	6.0	5.2	0.1	0.2	1.7	3.7		
	5	6.1	5.2	0.2	0.2	3.4	3.7		
		5.9	5.4	0.6	1.2	2.0	4.4	0.05	0.10
20	1	2.9	3.0	0.5	0.1	21	3		
	2	2.1	3.4	0.3	0.5	13	17		
	3	2.4	3.0	0.0	0.1	0	3		
	4	2.4	2.2	0.0	0.7	0	24		
	5	2.4	2.8	0.0	0.1	0	3		
		2.4	2.9	0.8	1.5	6.8	10.0	0.07	0.13
28	1	0.6	1.0	0.1	0.2	20	24		
	2	0.6	0.7	0.1	0.1	20	12		
	3	0.5	0.8	0.0	0.0	0	0		
	4	0.4	0.8	0.1	0.0	20	0		
	5	0.4	0.9	0.1	0.1	20	12		
		0.5	0.8	0.4	0.4	16.0	9.6	0.03	0.03
36	1	0.9	1.0	0.1	0.0	13	0		
	2	0.8	0.9	0.0	0.1	0	10		
	3	1.0	1.2	0.2	0.2	25	19		
	4	0.7	1.1	0.1	0.1	13	10		
	5	0.6	1.0	0.2	0.0	25	0		
		0.8	1.0	0.6	0.4	15.2	7.8	0.05	0.03
50	1	2.0	2.1	0.3	0.1	13	5		
	2	2.2	1.9	0.1	0.1	4	5		
	3	2.5	2.0	0.2	0.0	9	0		
	4	2.8	2.2	0.5	0.2	22	10		
	5	2.1	1.9	0.2	0.1	9	5		
		2.3	2.0	1.3	0.5	11.4	5.0	0.11	0.04
N-1	1	4.2	3.5	0.6	0.0	17	0		
	2	3.5	3.1	0.1	0.4	3	11		
	3	3.4	3.7	0.2	0.2	6	6		
	4	3.5	4.2	0.1	0.7	3	20		
	5	3.6	3.0	0.0	0.5	0	14		
		3.6	3.5	1.0	1.8	5.8	10.2	0.08	0.15
N-6	1	4.3	5.1	0.4	0.0	9	0		
	2	5.1	5.3	0.4	0.2	9	4		
	3	4.7	4.8	0.0	0.3	0	6		
	4	4.4	4.9	0.3	0.2	6	4		
	5	4.8	5.5	0.1	0.4	2	8		
		4.7	5.1	1.2	1.1	5.2	4.4	0.10	0.09
N-7	1	0.6	1.1	0.2	0.2	25	22		
	2	1.0	0.8	0.2	0.1	25	11		
	3	1.0	1.0	0.2	0.1	25	11		
	4	0.7	0.9	0.1	0.0	13	0		
	5	0.7	0.8	0.1	0.1	13	11		
		0.8	0.9	0.8	0.5	20.0	11.0	0.07	0.04
N-9	1	14.4	12.8	0.9	0.2	6	2		
	2	14.9	13.8	0.4	0.8	3	6		
	3	15.1	13.4	0.2	0.4	1	3		
	4	15.0	13.0	0.3	0.0	2	0		
	5	17.1	12.0	1.8	1.0	12	8		
		15.3	13.0	3.6	2.4	4.8	3.8	0.30	0.20
N-18	1	13.6	8.4	2.0	0.4	17	5		
	2	11.5	8.4	0.1	0.4	1	5		
	3	9.5	9.2	2.1	0.4	18	5		
	4	12.2	8.1	0.6	0.7	5	8		
	5	11.2	10.0	0.4	1.2	3	14		
		11.6	8.8	5.2	3.1	8.8	7.4	0.44	0.26

*Greaseproof side up.
†Greaseproof side down.

pliable sheet of standard material such as tissue, cellophane or plastic film. In the actual process of wrapping with barrier materials, however, the factor of friction is present and it is felt that friction should be considered as a component of the pliability measurement.

Hence, the two prime sources of deviations in the pliability readings are the lack of uniformity in the manufacturing and handling of the barrier material and the random pleating of the test specimen as it passes through the circular ring. These variations may be minimized and the true pliability value of a material may be determined by adopting a standard test procedure and by testing a number of specimens and averaging the readings.

It has been determined that with the recommended testing procedure, the probable error can be kept to less than one-third of a pound. If it is assumed that a pliability value of approximately 14 lbs. is acceptable, the instrument will be more than 97% accurate.

Over-all data gleaned from the testing program show that for material specimens with an average pliability of 5.1 lbs., the average deviation is only 0.42 lbs. or 9.1%, and that the average probable error is only 0.175 pounds. The average probable error of the original research prototype instrument was approximately 0.33 pounds. Thus, the modified instrument is nearly twice as accurate as the original research prototype.

No attempt has been made to correlate the pliability readings obtained with the modified instrument and the readings obtained in the laboratory with the original prototype instrument, since there

Table III: Average pliability values, in pounds, before and after aging

Grade	Type	Class	Unaged Flat	Unaged Stretchable	Aged Flat	Aged Stretchable
A	I	1 & 2	13.1	4.0	11.4	4.7
A	II	1 & 2	7.1	2.8	7.7	3.2
A	III	1 & 2	9.5	1.8	9.2	2.3
C	I	1 & 2	8.8	—	8.0	—
C	II	1 & 2	7.5	—	7.3	—

Table IV: Specification requirements for pliability

Grade	Type	Class	Flat	Stretchable
A	I	1 & 2	14	7
A	II & III	1 & 2	10	5
C	I & II	1 & 2	14	—

were a number of variables in the conditions of the tests and there were also several differences between the two instruments.

Effect of aging on pliability

A comprehensive program of laboratory testing and analysis was conducted to determine the effect of aging on pliability. Of the 70 materials that were included in the program, 49 had been previously investigated when the pliability tester was originally developed. The other 21 materials, most of them made for application under MIL-B-121A, were newly included in the investigation.

In Tables I and II, the "old" materials are designated in accordance with the numbers assigned under the original testing program, while the new materials are designated N-1, N-6, etc. Grade, type and class are shown.

The 70 materials having been conditioned (at approximately 72 deg. F. and 50% relative humidity for one week) and tested as required, the results of testing prior to accelerated aging were tabulated. It should be remembered, however, that the "old" materials investigated under the original testing program had been in the contractor's (Container Laboratories, Inc.) possession for approximately two years and a natural aging had taken place. For the new materials, testing after conditioning was on samples in the "as-received" condition.

Additional specimens of materials were then aged in accordance with the requirements of Specification MIL-B-121A. Pliability tests were conducted on the materials after accelerated aging and the results were also tabulated and studied.

To permit a comparison between pliability tests prior to aging and pliability tests after aging, the average readings for each grade, type and class of material, as well as for flat and stretchable materials, are listed in Table III. Examination of the data in this table indicates that the average pliability values (listed according to grade, type and class of material, flat and stretchable) did not change appreciably due to aging.

It was concluded, then, that the pliability test should be conducted only on unaged material. Also, that different specification requirements should be set up for each grade, type and class of material and for flat and stretchable materials.

As to the specification requirements (for inclusion for a possible amendment to or revision of Specification MIL-B-121A) that will apply, Table IV lists the maximum acceptable pliability values, in pounds, for each type, grade and class of material and for flat and stretchable materials.

Conclusions

The following conclusions are reached as a result of the work accomplished in the development of the original prototype instrument, as well as in the modification of the pliability tester:

1. The pliability tester establishes pliability as a distinct property in evaluating the acceptability of barrier materials.

2. When barrier materials are tested with the pliability tester in accordance with the recommended test procedure, reliable numerical values for pliability can be consistently obtained with an acceptable degree of accuracy.

3. The pliability-tester values are a significant indication of the acceptability of greaseproof barrier materials for military wrapping preparations. There is a close correlation between the values obtained with the pliability tester and the opinions of operating personnel as to the wrappability and over-all preference.

4. When requirements for pliability (Table IV) are placed in a possible amendment to or revision of Specification MIL-B-121A, certain unacceptable materials would be rejected which now must be accepted under the specifications.

5. The average pliability values (categorized according to grade, type and class of material, flat and stretchable) do not change appreciably due to aging.

6. Specification limitations on the pliability values should be different for Grade A and Grade C materials, and the types and classes thereof. Also, special consideration should be given to the stretchable materials (creped, embossed, puckered, wrinkled or otherwise treated to make them flexible).

7. The pliability tester should be equally applicable for evaluating and [*Continued on page 224*]

35 thin-wall cups a minute on the REED JETFLO

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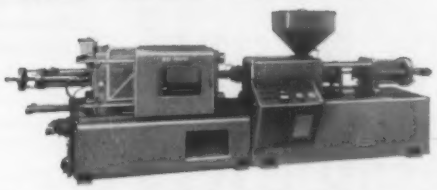

ACTUAL MOLD TEST RESULTS COMPILED BY THE REED JETFLO '6'

ITEM	MATERIAL	NO. CAVITIES	CONVENTIONAL MACHINE MOLDING CYCLE TIME	JETFLO MOLDING CYCLE TIME
Pint Container	High-impact Styrene	2	6 sec.	4.5 sec.
Small box	Styrene	16	20 sec. (on 8/10 oz. machine)	10.5 sec.
Small box	Styrene	8	8 sec.	4.9 sec.

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Should bag user make film?

Q: *We use polyethylene film for many types of bags and purchase this film from several suppliers. We are considering making film for our own use, but we are not sure which is the best film-making process for our purposes.*

We notice differences and variations in the quality of film received both from our suppliers and from other sources that have sent us samples. Our production covers many bag sizes and uses, and we use several grades of film. If we decide to install film-making equipment, it should be able to make all gauges from different types of resin and produce film of the best quality. Our question is, what type of film-making process would you suggest that will meet our requirements?

A: The polyethylene film and resin situation is currently in a state of flux because of many new developments and processes. New film resins of various densities and special properties are continually appearing on the market. Also copolymer resins of polyethylene and other olefins are or will soon be available, and much work is being done with polypropylene. It will take some time to evaluate these newer resins and to perfect them for commercial film production.

These newer resins are basically different in structure and processing qualities than the early low-density polyethylene resins and thus they will need different processing equipment and techniques. This is especially true for the resins designed to make stiffer films of maximum clarity.

Today most of the polyethylene film is being made by the blown-tube process. This process is capable of making film with good gauge uniformity and in a wide range of thicknesses, but it does not produce films of maximum clarity from a given resin because of air cooling.

Some film is made by the flat-die process, which makes film of good gauge range and uniformity, but has the advantage of being able to use several means of rapid cooling for improved clarity of the film. The flat-die process conventionally uses a large cooling drum, but there have been two developments that have greatly improved the cooling of the hot resin and, therefore, the clarity of the finished film. One of these is the cold-water quench and the other is the so-called chill-roll process that uses two smaller water-cooled rolls. Both of these developments are being given serious consideration by both resin and film makers because they can produce films with brighter surfaces and greater clarity.

Unfortunately, orientation effects must also be considered in any film-making process. Film for bag uses must have good mechanical properties both along and across the web if it is to have the higher impact strength that is required for many bag applications.

Some of the newer resins made into film of maximum clarity by the rapid-cooling process do not have this balance of mechanical properties necessary for many bag uses.

Much research and development is being done both on the resins and on the film-making techniques to give the user polyolefin films of a wider range of properties and of improved appearance. However, until this development and evaluation program has had time to resolve some of the current problems, it is suggested as more practicable that you defer your decision to purchase your own film-making equipment.

Versatile lid labelers

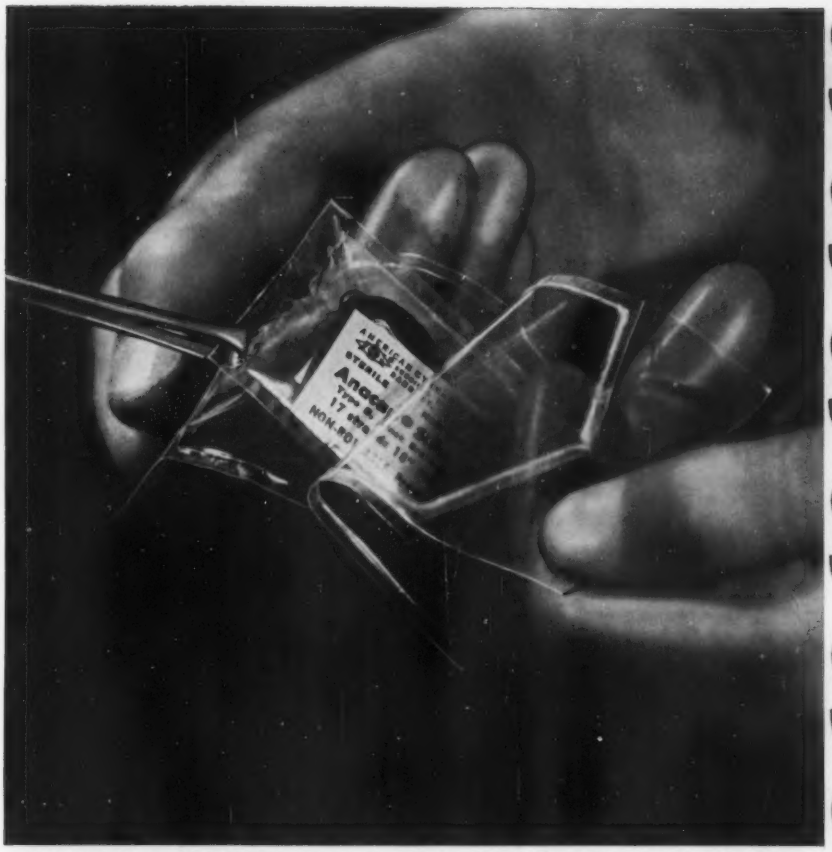
Q: *Do you know of a versatile way by which we can apply brand and product information to the tops of plastic lids? These plastic lids are used as closures for paper containers in which we package a wide variety of different products. Your advice will be appreciated.*

A: We assume that you are looking for something other than conventional imprinters and silk-screen machines, which are available by the score, and which you could use to pre-print your lids. There are two other techniques—pressure-sensitive labeling and heat-transfer labeling—that might serve your purpose. These units can be installed right in your packaging line, are capable of almost any operating speed, can be changed over rapidly and can apply decorative designs of almost any desired complexity.

Several pressure-sensitive labelers are on the market. These units can be installed over the exit conveyor from the capper, thus applying labels to the filled and closed containers. In most of these labelers, the pressure-sensitive decorations are mounted on a paper strip. They are stripped from this web and spotted on a horizontal surface with great speed and accuracy.

The heat-transfer labeler is similar in many respects. Primarily used for decorating plastic bottles and flat film, this technique utilizes an inked design, printed in reverse on a paper strip coated with a heat-release material. When the design is pressed against a plastic surface by a heated mandrel, the design transfers to the plastic. This method of decorating has now been worked out for lids and other regular surfaces, can also be installed in-line and might provide a very economical solution to your problem.

With both types of machine, change-over simply involves a switch in roll stock and possibly a change in height for containers with different measurements.



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Plants & People

John C. Denton has been elected pres. of **Spencer Chemical Co.**, Kansas City, Mo. He succeeds **Kenneth A. Spencer**, who, as chairman of the board, will continue as chief executive officer of the company. In other promotions announced by Spencer, **C. Y. Thomas** becomes vice chairman of the board, **Joe E. Culpepper** has been named senior v. p. for marketing, and **Byron M. Kern** succeeds Mr. Denton as v.p. of the Agricultural Chemicals Div.

McCarthy

Richard H. McCarthy, Jr., has been appointed director of sales for the **Bradley-Sun Div., American Can Co.**, New York. Mr. McCarthy, who had been mgr. of the div.'s Washington, N. J., plant, will supervise sales of collapsible metal and plastic tubes, plastic bottles, aluminum impact extrusions and other items. He joined the former Sun Tube Corp. in 1955 and remained with the organization upon its purchase by American Can.

Harry J. Blum has been named exec. v.p. in charge of sales by **Mead Board Sales, Inc., sub. The Mead Corp.**, Dayton, **O. D. A. Mutchler** becomes v.p. and **G. R. Browner** is asst. v.p. Mr. Blum helped found Mead Board Sales in 1946 and has been associated with the paperboard industry for 28 years. Mr. Mutchler joined The Mead Corp. in 1935.

John J. Sherlock has been named mgr. of bleached board development at **Continental Can Co.**, New York. He succeeds **George S. Johnston**, resigned.

Crown Cork & Seal Co., Philadelphia, has named **Morton M. Dukehart** mgr. of can sales to the brewing, soft-drink and food industries. Mr. Dukehart was formerly mgr. of multi-unit packaging for **Lord Baltimore Press**. **William D. Wallace** and **Lowell H. Smith** have been elected v.p.'s of Crown Cork & Seal. As v.p. and director of operations, Mr. Wallace now heads all Crown's manufacturing, industrial relations and engineering activities. Mr. Smith will continue as gen. mgr. of the company's machinery div. **John L. Carnie** succeeds Mr. Wallace as director of manufacturing.

Dukehart

A new firm, **Steven Enterprises**, headed by **Ned L. Roberts**, has been established at Burlingame, Calif. The newly formed organization offers services in the field of technical development and marketing of machinery and products related to packaging and plastics. Mr. Roberts recently resigned as pres. of **Ned. L. Roberts, Inc.**, a company he formed some years ago for the manufacture of polyethylene packaging and vacuum-forming machinery.

Philip E. Denner has been promoted to the post of mgr. of set-up box industry sales in the Converter Sales Div. of **Nashua Corp.**, Nashua, N. H. He is succeeded as velour specialist for the Div. by **James J. Dugan**. Mr. Denner, who joined Nashua in 1953, will direct sales to the set-up box industry and will supervise sale of flocked products and heat-seal board for skin and blister packaging.

St. Regis Paper Co., New York, has appointed **William B. Bunn** as director of advertising and sales promotion. **Frederick C. Stakel**, advertising mgr., has resigned from the company.

Fritts

Harry W. Fritts becomes mgr. of the packaging section, sales-development div., **Aluminum Co. of America**, Pittsburgh. He succeeds **Phillip C. Althen**, now tech. mgr. for rigid containers. Mr. Fritts will be responsible for developing new packaging applications by Alcoa. A member of the **Technical Assn. of the Pulp & Paper Industry**, he has been with Alcoa since 1948.

The appointment of **Richard W. Phelps** as gen. mgr. of the **Dilts Div.** has been announced by **The Black-Clawson Co.**, New York. Mr. Phelps was formerly mgr. of engineering and product development for Dilts, which makes the Black-Clawson line of converting machinery for paper and plastics. He succeeds **Robert J. Jacobs**, resigned.

B. J. FARINA

With deep sorrow, Breskin Publications announces the loss of a veteran and valued staff member. Bernard J. Farina, assistant production director of MODERN PACKAGING and *Modern Plastics*, died suddenly July 21 in New York Hospital of complications following an operation. He was 44 years old.

"Ben" joined this organization in 1938, starting in the Shipping & Receiving Department. Later, he was placed in charge of touring exhibits for both magazines and became widely known throughout the country. For the last 10 years he had been assistant director of the Production Department. He was respected for his ability and loved for the warmth of his personality.

Mr. Farina lived in Massapequa, L. I. He is survived by his wife, Jeanette, and two daughters, Marie and Barbara.

Klusmire

G. J. Klusmire has been appointed product mgr. for Saran Wrap and Trycite films for the Packaging Div. of **The Dobeckmun Co.**, Cleveland, a div. of **The Dow Chemical Co.** He will be responsible for the sale of these films in unconverted form to direct users. Dow will continue to handle sales to converters, consumers and the agricultural and construction markets.

Injection Molding Co. (IMCO), Kansas City, Mo., has been purchased by **Rexall Drug & Chemical Co.**, Los Angeles. IMCO is one of the country's largest blow molders of polyethylene bottles. **William Archer** will continue as head of the firm, which is the second company in the plastics-packaging field to be acquired by Rexall in recent months. Last spring, the company purchased **Chippewa Plastics, Inc.** (see MODERN PACKAGING, April, 1959, p. 218).

T. Richard Probst succeeds **W. A. Wylde** as pres. of **Deerfield Glassine Co.**, Monroe Bridge, Mass. Mr. Wylde will continue as a director and as a consultant. **Richard Emery** becomes sales mgr. for the company.

Gilbert W. Bassett has been promoted to sales mgr. of **The Miehle Co., div. Miehle-Goss-Dexter, Inc.**, Chicago. Mr. Bassett, who was formerly marketing mgr., is now responsible for sales of Miehle's line of letterpress, offset and specialty presses.

Hawes

Brockway Glass Co., Brockway, Pa., has appointed **John C. Hawes** to the post of mgr. of marketing, advertising and promotion for the company. In the same capacity, he will be responsible, also, for Brockway's subsidiaries, **Demuth Glass Works** and **Tygart Valley Glass Co.**

Frank S. Bonham is the new tech. director of **Fome-Cor Corp.**, Springfield, Mass. He will be in charge of research, production and engineering. Fome-Cor was formed early this year by **St. Regis Paper** and **Monsanto Chemical** to manufacture and market Fome-Cor, a new lightweight "sandwich" of foamed plastic core and kraft paper.

Fred Barber has been named director of manufacturing and technical services for **The Gardner Div., Diamond Gardner Corp.**, Middletown, O. Formerly asst. to the div. pres., Mr. Barber is now

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In every production dollar a large percentage goes to handling containers, packaging and sealing. You can greatly reduce that percentage with A-B-C equipment.

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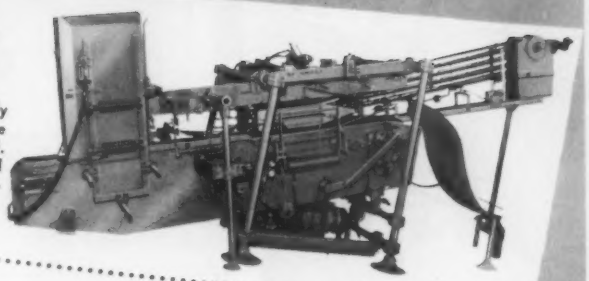
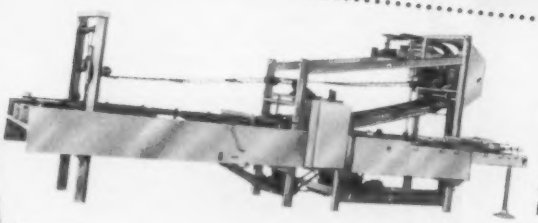
Cases are automatically stripped from magazine opened and positioned. Cans collected and packed up to 30 multi-tier cases per min.



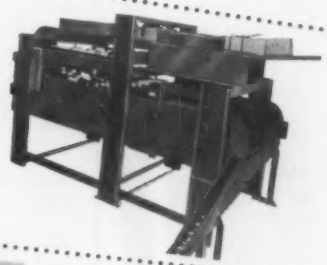


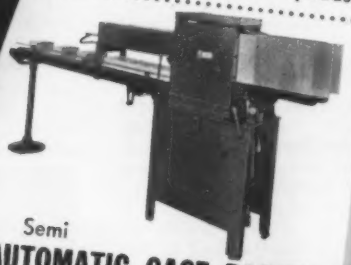
Model G CASE UNLOADER and UNSCRAMBLER

Unloads glass or cans in single tier cases. Continuous motion permits highest speed. Adjustable to a wide range of sizes.

Model K UNLOADER and UNSCRAMBLER

STEEL or ALUMINUM cans automatically unloaded and unscrambled from single or multi-tier cases. Will not mar litho labels. Multiple speeds.





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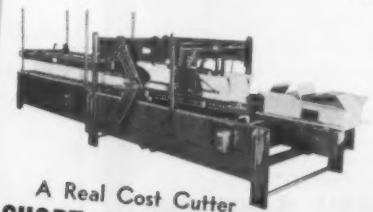
Saves Floor Space



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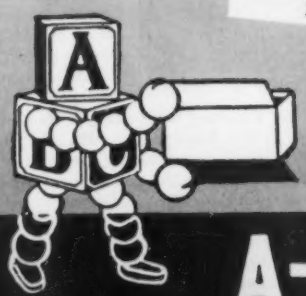
SHORT CASE SEALER
OVER 100 MODELS



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Division of St. Regis Paper Company

APPLICATIONS

Ideal for pressure sensitive backing . . . tapes and labels; decals; board and bag lining; corrugating. Or casting paper for polyurethane foams, polyesters, and plastics; packaging or processing synthetic rubber and asphaltic products; and for in-plant meat processing and food packaging.

Plants & People [*Cont'd*]

responsible for the traffic, engineering, purchasing, industrial engineering, production planning and research and development depts.

Packaging Corp. of America is the corporate name that has evolved from the merger of three packaging-material supply companies. The merged firms are: **American Box Board Co.**, Grand Rapids, Mich.; **Central Fibre Products Co.**, Quincy, Ill., and **The Ohio Boxboard Co.**, Rittman, O. Pres. of the new company is **William D. P. Carey** of Central Fibre. Board chairman is **Wayne Young** of Ohio Boxboard. These two men and **Walter S. Goodspeed** of American Box Board constitute Packaging Corp.'s Executive Committee, with Mr. Goodspeed serving as its chairman. Exec. v.p. is **J. N. Andrews** of Ohio Boxboard.

Following its recent acquisition of facilities formerly operated by the **Fort Wayne Corrugated Paper Co.**, the **St. Joe Paper Co.** of Jacksonville, Fla., has formed the **Fort Wayne Corrugated Paper Co. Div.** and has appointed **Paul F. Dickmeyer** as gen. mgr. The three plants which make up the new div. were purchased last June from **Continental Can Co.**, with which the original Fort Wayne Corrugated recently merged.

Corry

John A. Corry has been promoted to the post of new products coordinator for aluminum cans in the Metal Div. of **Continental Can Co.**, New York. Formerly assisting in this position, he now has full responsibility for the coordination of development, initial production and sales efforts pertaining to Continental Can's line of aluminum containers.

P. E. Morrill, v.p., has retired after 45 years of service with the **Bemis Bro. Bag Co.**, St. Louis.

R. R. Ernst has been elected v.p. and sales mgr. of the Container Div. of **Bennett Industries, Inc.**, Peotone, Ill. **L. A. Istel** has been elected v.p. and asst. gen. mgr. of the company and **A. J. Gasbarra**, exec. v.p., becomes a director.

J. L. Clark Mfg. Co., Rockford, Ill., has acquired a substantial interest in **G. Felsenthal & Sons, Inc.**, Chicago, a plastics-molding company specializing in injection molding. Clark is a manufacturer of lithographed metal containers. **Ben W. Rau** will continue as pres. of Felsenthal; **Earl R. Keown** continues as v.p.

Lawrence F. Heileman has been appointed managing director of the Cosmetic and Aerosol Divs. of **The Risdon Mfg. Co.**, Naugatuck, Conn.

Jonathan I. Clement has been promoted to mgr. of the newly formed sales-promotion dept. of the Glass Container Div. of **Owens-Illinois Glass Co.**, Toledo, O.

Packaging Consultants Inc., a new firm of packaging engineers, has been formed in Washington, D.C. Its pres. is **Thomas P. Wharton**, former v.p. of Container Laboratories, Inc. Directors of the company include: **Paul O. Vogt**, former mgr. of packaging and warehousing, General Electric; **Allyn C. Beardsell**, former pres. of Container Laboratories and for many years head of packaging at Western Electric Co.; **Robert W. Johnson**, and **Milton Carr Ferguson**. Mr. Wharton says the new company will be concerned with the development, evaluation and application of new packaging materials; the promotion of advanced packaging concepts, and the integration of packaging and handling methods. Company address is 4380 MacArthur Blvd., NW, Washington.

Wharton

George W. Holt has been appointed to the newly created position of mgr. of new product development for the Packaging Group of **Fibreboard Paper Products Corp.**, San Francisco. The new dept. will screen and plan new packaging projects involving fundamental changes in approach or technology and will coordinate and guide all activities toward commercial application.

Horix Mfg. Co., Pittsburgh, has acquired **Canning Machinery Co.**, Portland, Ore., maker of machinery for handling products packaged in glass and cans. The new line of equipment will augment the present line of fillers and conveyors manufactured by Horix.

John I. Pritchett, v.p. of **Highland Container Co.**, sub. **Union Bag-Camp Paper Corp.**, New York, becomes also Southern sales mgr. of the parent company's container sales dept.

Arthur J. Ringman becomes asst. v.p. and mgr. of sales for the Atlantic Div. of **National Can Corp.**, Chicago. He was formerly sales mgr. of the Div.'s Southeast district and has been with National Can since 1950.

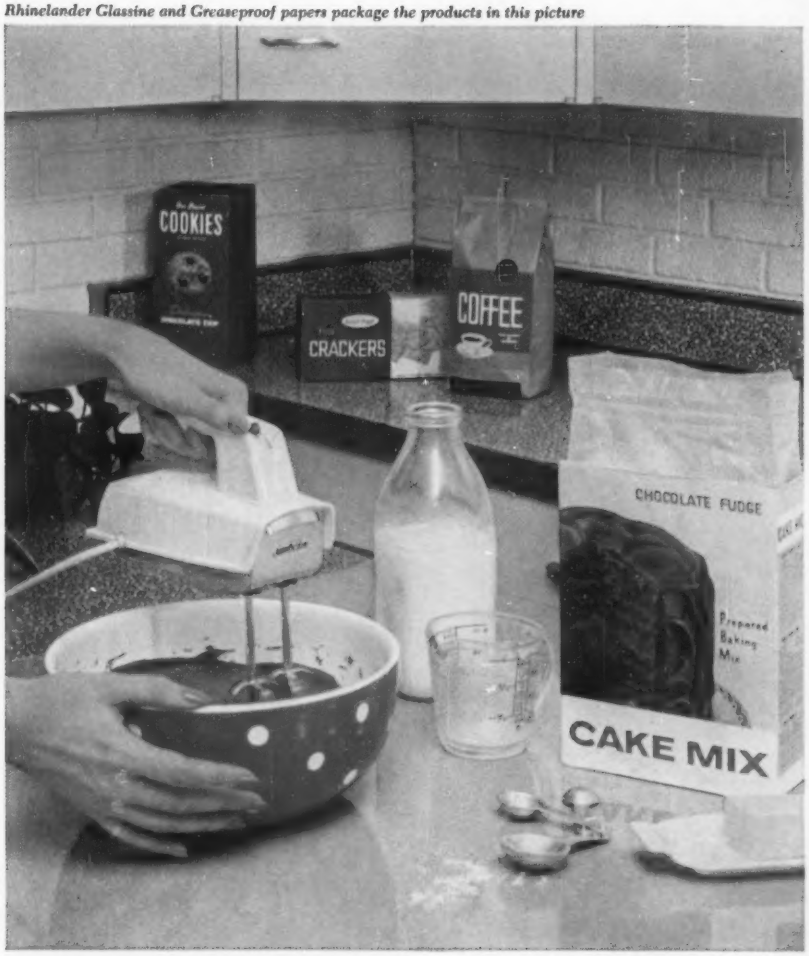
Crossett Paper Mills, Div. The Crossett Co., Crossett, Ark., has reorganized responsibilities in its sales dept. **J. W. Taylor** becomes Eastern sales mgr. and **Don Hodge** becomes Western sales mgr. Mr. Taylor will be headquartered in New York and will be responsible for sales in the Eastern U.S. Mr. Hodge, from Chicago headquarters, will direct sales activities in the territory serviced by the Chicago and Dallas offices.

Taylor *Hodge*

Two new corrugated-box plants are being opened by **West Virginia Pulp & Paper Co.**'s **Hinde & Dauch Div.**, Sandusky, O. One is in Phoenix, Ariz.; the other in Torrance, Calif. Both are scheduled

beat well... goes for paper making, too

Rhinelander Glassine and Greaseproof papers package the products in this picture



Beat Well says the recipe – and the housewife who knows her cakes knows the importance of beating. And beating is equally important in the making of the high density wax laminated liners that protect cake mixes. These and a host of other time-saver foods are packaged in Glassine and Greaseproof papers . . . the wonder papers of modern packaging. Write for complete information stating your particular application.

In making Glassine and Greaseproof at Rhinelander, beating is a meticulously controlled process, considerably lengthened to transform the cellulose fibres into tiny strands, later tightly compacted on the paper machine. The microscopic fibrillae give Glassine and Greaseproof its density, its greaseproofness, and versatility.

These tight, dense papers keep foods fresh – resist greases, oils and fats–retain aromas, and protect flavor and quality.

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GLASSINE AND GREASEPROOF... *PAPERS FOR PROTECTIVE PACKAGING*

Creations in color

...on metal

Inviting as these packages appear on the printed page, you must see them in-the-metal to appreciate their glowing beauty. Nothing can replace the good impression metal makes. Continental artists and craftsmen bring fresh eyes and rich experience to each decorating assignment. Let them create a package in color for you.

CONTINENTAL CAN COMPANY

Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: [illegible] Building, San Francisco 4
Canadian Division: 790 Bay St., Toronto, Ont.

to begin operation before Jan. 1, 1960. Much of the production of the new plants will be devoted to moisture-resistant corrugated board.

Hugh W. Hicks becomes v.p. and gen. mgr. of **The Lord Baltimore Press of California**, West Coast operation of **The Lord Baltimore Press**, New York. Mr. Hicks will be responsible for sales, administrative and manufacturing operations on the Coast.

The Champion Paper & Fibre Co., Hamilton, O., has purchased the **Wertgame Paper Co.** of Kansas City, which will be operated as a subsidiary.

John S. Torrey, gen. mgr. of the **Avery Label Co.**, has been elected v.p. of **Avery Adhesive Products, Inc.**, Monrovia, Calif. Mr. Torrey, who joined the firm as gen. sales mgr. in 1948, heads up all facets of Avery's Label Div., both production and sales.

Selden

Thatcher Glass Mfg. Co., New York, recently appointed **George D. Selden** as New York district sales mgr. for its Plastic Container Div. Mr. Selden comes to Thatcher from **Vick Chemical Co.**, where he was in charge of market and product research for extruded plastics.

St. Regis Paper Co., New York, and **Lone Star Bag & Bagging Co.** of Houston, Tex., are planning a merger. Lone Star makes multiwall paper bags, burlap and open-mesh textile bags.

Its big new packaging research and development center in Chicago is rapidly nearing completion, reports **Kaiser Alum'num & Chemical Corp.**, Oakland, Calif. The facilities will be used to develop further end uses for aluminum foil, to improve currently used packages and to assist customers in the adaptation of foil packaging materials. The new lab is twice as large as the original Chicago lab it replaces. Among the new equipment is a pilot plant for coating, printing and laminating foil to a wide range of other materials. Other new features include a package-design department and an engineering section.

Knox Glass, Inc., Knox, Pa., has purchased **Buck Glass Co.**, Baltimore. The latter company, now celebrating its 50th anniversary, sells principally to the food and beverage industries. Buck will be operated by Knox without change in personnel or organization.

William K. Rich has been appointed gen. sales mgr. of the Adhesive Div. of **Armour Alliance Industries**, Alliance, O. He was formerly regional mgr. for the division.

Celanese Corp. of America, New York, has organized three new companies to administer the manufacture and marketing of its fibre, chemical and plastics products. **Celanese Fibers Co.**, **Celanese**

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MILLIONS

of RODENT BAIT STATIONS

no problem at all for PLAXALL

. . . quantities so large that if placed end to end the plastic trays would stretch from New York to beyond Chicago

PRECISION

Huge, continuous rolls of plastic material feed into high-speed equipment to automatically pressure-form, trim, and stack these trays with the precision and accuracy of metal stamping . . . each forming featuring girder-like cross bracing and precisely cut rolled edging to add strength and rigidity to the lightweight plastic.

LOW COST

Whether the quantity be measured in thousands or millions, PLAXALL'S automatic equipment coupled with more than 20 years of forming experience cuts prices to a fraction.

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These 4¼ x 6 inch trays are produced at a rate upwards of 6,000 per hour per machine. When delivery speed is important, PLAXALL'S reliable, efficient high production facilities provide the answer.

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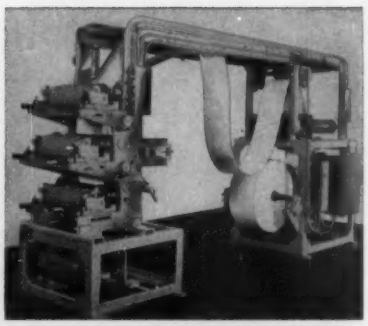
Multicolor Web Printing Presses Bag-Making Machines



JUNIOR 12" STACK PRESS

Prints up to three colors on webs up to 12" wide at 400 ft/min. Highly compact (2' wide by 15' long). Ideal for commercial production or test runs. Equipped with electronic automatic constant tension controls.

MANHASSET makes a wide range of WEB PRINTING PRESSES — flexographic, gravure, letterpress, for roll-to-roll printing of cellophane, polyethylene, paper, board, etc. Also BAG-MAKING MACHINES for notion, millinery and specialty bags.

Send for specifications, performance data and prices.

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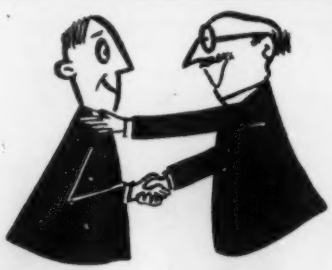

CONGRATULATIONS, SCHWERBITZ! YOU'VE LICKED OUR STATIC PROBLEM!

"Not me, sir . . . it was those Simco '*Midgets*' that did the trick. Simco engineers have perfected electronic static eliminators to a point where they can actually *guarantee* them to be effective on every possible application!

"It's amazing, too, sir, that these '*Midgets*' cost practically nothing to operate. They're perfectly safe, with no radiation or health hazards . . . and they're so easy to install!

"Simco's *shockless bars* work wonderfully well in those areas where we have inflammable atmospheres—with no fears of spark hazards. No sir! . . . I deserve no credit . . . it all belongs to those Simco '*Midget*' Static Eliminators."

"Nonsense, Schwerbitz . . . you *discovered* those Simco '*Midgets*'! Don't be so modest!"

Write today for information about Simco's complete line for all film converting and packaging operations: neutralizer bars, anti-static cleaning devices and sheet separators, sprays and static locating meters.

the SIMCO company
920 Walnut Street, Lansdale, Pa.

Plants & People [*Cont'd*]

Chemical Co. and **Celanese Plastics Co.** will operate as divisions of the parent firm. **John W. Brooks** has been named pres. of Celanese Fibers. **Richard W. KixMiller** has been appointed pres. of both Celanese Chemical and Celanese Plastics.

Dudley B. Smith has joined **Clupak, Inc.**, New York. He will specialize in activities connected with the licensing of foreign paper manufacturers to make Clupak extensible paper and to use the Clupak trademark.

Arthur T. Safford has succeeded **Walker Hamilton** as div. v.p. for marketing in the Packaging Div. of **Olin Mathieson Chemical Corp.**, New York. Mr. Safford was formerly marketing mgr. of the Div. Previously, he was asst. gen. mgr. in charge of sales and research in Olin's Film Div. Mr. Hamilton, who has been with Olin Mathieson since 1956 when he retired as pres. of **Riegel Paper**, will continue as a consultant to the company.

Safford

Robert K. Dix becomes a v.p. of **Enjay Co.**, New York. He succeeds **H. J. Rose**, resigned. Mr. Dix now heads Enjay's products management dept., which includes four divs.: butyl, plastics, chemicals and additives.

American Machine & Foundry Co. of New York has joined with two Australian enterprises—**British Tobacco Co. (Australia), Ltd.**, and **Sterling Industries Pty. Ltd.**—to form a new company known as **AMF Sterling Industries.** The new organization will manufacture a line of bread-wrapping machines.

Foeppel

Kenneth G. Foeppel has been named dist. sales mgr. in western New York for **Mead Containers, Inc.**, Cincinnati, sub. **The Mead Corp.** He will make his headquarters at the company's Delavan Div. in Syracuse. Mr. Foeppel, who has been active in the corrugated - shipping - container industry for over 25 years, formerly worked in Mead Containers' New York City office.

Prescott Van Horn, asst. to the director of manufacture of the Film Dept. of **E. I. du Pont de Nemours & Co.**, Wilmington, Del., has retired after a 35-year career with the company.

United Shoe Machinery Corp., Boston, has named **John C. Eldridge** as mgr. of sales development for Thermogrip hot-melt adhesives and applicators.

Edlon Machinery Ltd., is a new company which imports machinery for the packaging and plastics industries. The firm is located at New Ruskin House, [*Continued on page 168*]

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UNIT PACKAGER

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- LIQUIDS
- POWDERS
- TABLETS
- SOFT GOODS
- FOOD PRODUCTS
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or any reasonably flat small product

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TABLET UNIT PACKAGER

Ideal for packaging particularly dusty tablets—such as bleach tablets, soft drink tablets, etc.

Speeds up to 600 tablets per minute.

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by Plastic Artisans, Inc.

Winthrop Laboratories Gets Sampler, Sales Package and Bulk Packing From 1 Basic Die

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Sampler Package

Sales Package

Bulk Packing

PLASTIC ARTISANS, INC.

Dock Street & Martin Place

Port Chester, New York

PA

Custom-Designed, Mass-Produced packages, package components, sampling devices, etc., in clear, opaque and colored plastics.

PA-110

CLUPAK EXTENSIBLE KRAFT PAPER

ORDINARY KRAFT PAPER

DISCOVERY OPENS NEW ERA FOR PAPER

NOW, PAPER THAT

DROPPED CAN crashes through ordinary paper which lacks stretch, but bounces off CLUPAK paper of equal basis weight. Unlike creped paper which stretches easily, every fiber of CLUPAK paper resists as it stretches.

NEW TOUGHNESS, FLEXIBILITY CUTS PACKAGING COSTS, INSPIRES NEW PRODUCTS.

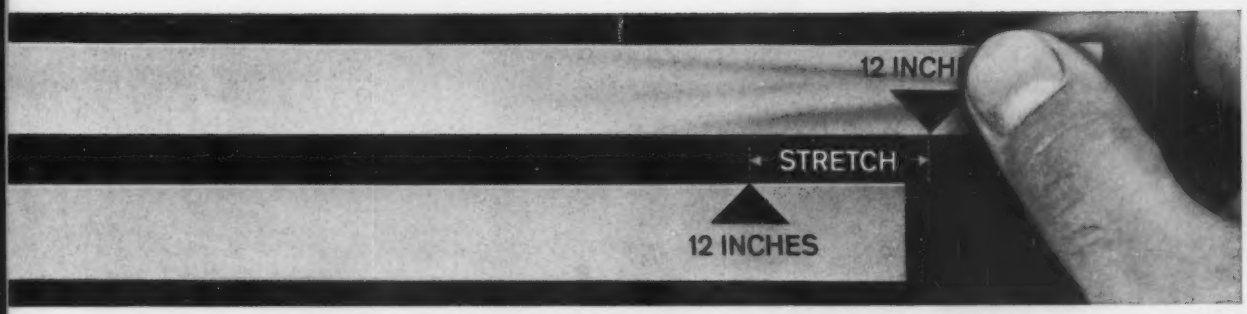
Until the invention of CLUPAK Extensible Paper, paper has just been strong. It resisted the energy of impact until it ripped or tore. But now paper can also be *tough*. CLUPAK paper has a built-in stretch that lets it absorb energy that otherwise would cause it to break.

Because CLUPAK can be almost any type or basis weight

MULTIWALL SACKS perform strikingly better when made with CLUPAK paper. Bottom sacks here carry 6,000 pound weight without failing, resist roughest handling. Basis weight can often be reduced substantially, cutting sack cost.

GROCERY BAG of ordinary kraft splits, spills contents after drop, but the much tougher CLUPAK paper bag absorbs shock, remains intact.

STACK COMPARISON shows how CLUPAK flexibility enables multiwall sacks to fill better, for many products, saving up to 25% of space needed for storage and shipping.



STRETCHES

of paper, with varying controllable degrees of stretch, it transforms conventional paper into virtually a new material—one with almost unlimited possibilities.

CLUPAK stretch is already giving multiwall sacks, grocery bags, magazine wrappers, paper-base pipe and laminates, shipping containers and many other products spectacularly better performance and lower costs. And the flexibility of CLUPAK papers can also mean startling savings and advantages in many uses and situations.

But these applications of CLUPAK Extensible Paper are only the beginning. CLUPAK is the most exciting new word in paper. The "give" it adds to paper opens a new era, invites a thousand new products and design improvements. We suggest you investigate the potential of CLUPAK for your business. It will pay you to consult your paper supplier. Our licensees, who make CLUPAK paper, are listed below. ***Clupak, Inc., 530 Fifth Avenue, New York 36, N. Y.***

UNIQUE TEST machine measures and graphs far greater toughness of CLUPAK paper. Printability, surface friction, porosity and other properties of CLUPAK paper can be controlled as with conventional paper.

KEY FACTS FOR BUYERS

1. CLUPAK kraft is the same as ordinary kraft except that it is stronger, tougher and more flexible. Its built-in stretch accommodates strains that break ordinary kraft.
2. This increased toughness, for example, allows multiwall sack users to increase strength yet decrease the number of plies with resulting economies.
3. CLUPAK, INC. conducts research and development activities and advises licensees on technical matters.
4. CLUPAK, INC. permits the use of its trademark only on paper which meets this company's rigid toughness requirements.

EXTENSIBLE CLUPAK PAPER

TRADEMARK "CLUPAK" is your assurance that paper will deliver remarkable CLUPAK benefits. Look for it, expect it.

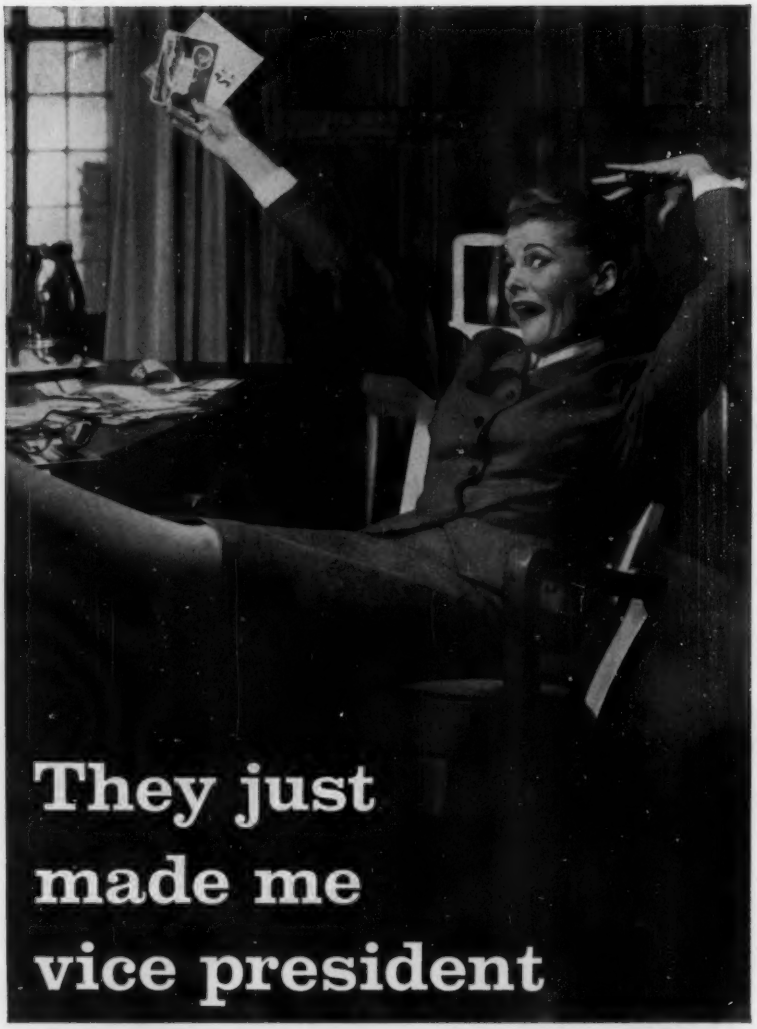
BE SURE TO LOOK FOR THIS TRADEMARK

EXTENSIBLE **CLUPAK®** PAPER*

*Clupak, Inc.'s trademark for extensible paper manufactured under its authority.

You can now get CLUPAK paper and products made with CLUPAK paper from

ALBEMARLE PAPER MANUFACTURING CO.
CALCASIEU PAPER CO.
CANADA PAPER CO. *(Canada)*
CROWN ZELLERBACH CORP.
CONTINENTAL CAN COMPANY, INC.
DYNÄS AKTIEBOLAG *(Sweden)*
HUDSON PULP AND PAPER CORP.
INTERNATIONAL PAPER CO.
ST. LAWRENCE CORP., LTD. *(Canada)*
ST. REGIS PAPER CO.
UNION BAG-CAMP PAPER CORP.
WEST VIRGINIA PULP AND PAPER CO.



They just made me vice president in charge of labels!

"You don't believe me? All right, if you want to be a square, let's say they *practically* made me a Vice President after I started ordering from Ever Ready. We don't have a label problem any more. Ever Ready never lets us down on service, quality, *or* reasonable price!"

Over a million satisfied customers like Ever Ready service too! Whether you need packaging labels, shipping, pressure sensitive, tabulating labels, fund raising seals, heat seal, foil or *any* other type of label, Ever Ready provides one-stop shopping for all your requirements. Fifty years of know-how assures you experienced, efficient handling of your orders.

You can cut costs, improve efficiency, boost sales with Ever Ready label ideas. Write *today* to Carol Hampton, our promotion manager, for Ever Ready's amazingly helpful idea kit.

EVER READY LABEL CORPORATION
353 Cortlandt Street, Belleville 9, New Jersey

Plants & People

[*Continued from page 165*]

28-30 Little Russell St., London, England. **O. Edler,** managing director of Edlon, will be in New York from Sept. 5, at the Barbizon-Plaza Hotel.

Albro F. Downe is the newly appointed v.p. in charge of creative design for package planning at **Lippincott & Margulies, Inc.,** design firm, New York.

Harold Blancke, pres., has been elected board chairman and **George Schneider** vice chairman of **Celanese Corp. of America,** New York.

Bernard P. Altick has resigned as v.p. of **Fibreboard Paper Products Corp.,** San Francisco. He will remain with the firm as a consultant.

Rowells

Bill Rowells has been named director of the newly established Package Design Dept. at **Helene Curtis-Lentheric,** a div. of **Helene Curtis Industries,** New York. Mr. Rowells, who joined the cosmetics-packaging firm in 1952, had been art director of the company since 1957.

J. T. Shipley, gen. mgr. of the Atlantic Div. of **National Can Corp.,** Chicago, has been elected v.p.

Arthur E. Sloan has been named gen. sales mgr. of **Rap-In-Wax Paper Co.,** Minneapolis. He had been director of the company's Industrial & Commercial Sales Divs. Mr. Sloan is responsible for product development and sales activities in the food, commercial, industrial and bakery-packaging sales divisions.

FMC International, a div. of **Food Machinery & Chemical Corp.,** San Jose, Calif., has been appointed exclusive export sales agent for the web-splicing and web-bending equipment produced by **Butler Automatic Machine, Inc.,** Cambridge, Mass. The entire free world outside the Continental U.S. and Canada is covered by the agreement.

John P. Bronson has been appointed sales mgr. of the Box Board Div. of **Consolidated Paper Co.,** Monroe, Mich. He joined the company in 1945.

W. W. Jackson has retired as pres. of **Hoerner Boxes, Inc.,** Keokuk, Iowa, for reasons of health. The position of pres. has been assumed by **R. N. Hoerner,** board chairman.

The food and container section of the **W. F. & John Barnes Co.,** Rockford, Ill., has been given division status, with **C. J. Smith** named v.p. in charge. The new Food & Container Div. will manufacture and market the Barnes automatic case packer for glass containers; the Barnes loader and unloader for retort baskets; the Barnes Single-Filer for unscrambling glass containers, and custom-designed conveyors, packing and processing equipment for the food and

NEW CADY MICROMETER

for calipering in

Ten-Thousandths of an Inch

This precision instrument supplies accurate thickness readings for plastic films, foils, papers, any thin sheet stock up to .050". Also available with Metric Dial. Immediate Delivery. Write for complete information and price.

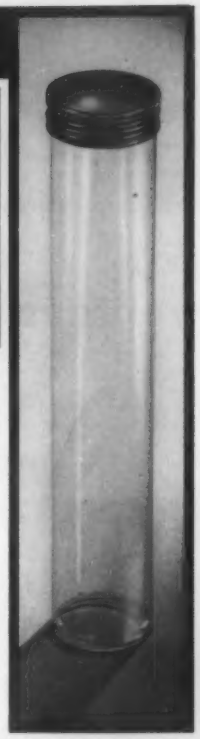
E. J. CADY & COMPANY

658 N Harlem • River Forest, Ill.

ANY LENGTH

Now with

POLYETHYLENE PLUGS



FLEX Containers and Vials

Flex containers and vials are now available in *any* length to accommodate *any* product or *anything*. Flex containers are now also available with smart-looking polyethylene closures.

- 10 stock diameters from ¼" to 1⅜"
- Plain or attractively decorated
- Metal screw closures, metal snap caps, polyethylene plugs
- For hardware, small tools, electronic parts, machine parts, precision parts, notions, many other items

Crystal-clear Flex cellulose acetate containers and vials *insure* good visibility of your product—*increase* its sales appeal and shelf life.

Write today for free samples.

Flex PRODUCTS CORPORATION

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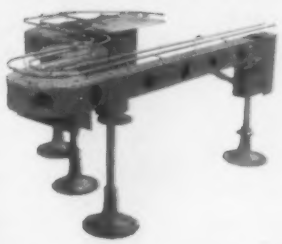
REDUCE HANDLING *Costs*

Keep Production Flowing Smoothly with *Styl-O-Matic*® Bottle Conveyors

THE REX CHAIN #815 CONVEYORS

carries bottles, jars, cans and other containers in a single file through various stages of a production line. No jerking, no rough or high spots to cause spilling or breakage. Steel or stainless steel . . . any length required . . . 3 chain widths . . . it is ideally suited for every producer of canned and bottled products.

2 types of nylon top chains, corner brackets with discs or transfer discs are available for the Rex Units . . . 3 type Power Units available for Rex or Lateral Curve Units . . . leg supports available with standard pedestal base or sanitary tripod base.



THE LATERAL CURVE CONVEYOR

permits a production line to move straight, around curves and up or down normal inclines or declines. Only one Power Unit is required and transfer discs are not required at curves . . . steel or stainless steel . . . any length required . . . supplied with or without pack-off tables.

Please mail coupon for detailed information

ISLAND EQUIPMENT CORP. Dept. MP-9

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Please send information on the following:

- ☐ Rex Chain #815 Conveyor
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General Mills uses

SEAL-SPOUTS

for perfect packaging

General Mills, as a final step to perfection in packaging their new PROTEIN PLUS hot oat cereal, added SEAL-SPOUTS for

EASIER OPENING
EASIER POURING
EASIER STORING

For a plus value, Seal-Spouts have established consumer acceptance and preference for aluminum pouring spouts.
And for production economy, Seal-Spouts are automatically applied to the package right in the production line.
If you package free-flowing products, Seal-Spouts will help you sell them.

SEAL SPOUT Corp.

MOUNTAINSIDE, NEW JERSEY

Plants & People [*Cont'd*]

drug industries. **W. M. Parry** has been named sales mgr. for the div. **R. H. Rummel**, formerly with **General Foods**, becomes chief engineer.

The Dow Chemical Co., Midland, Mich., has doubled its polyethylene-producing capacity for the second time in a year wth the completion of a new plant in Freeport, Tex. Dow also has begun construction of polyethylene plants at Plaquemine, La., and Bay City, Mich. The latter will produce high-density polyethylene resins.

An expansion of operations has been made by **Abbott Plastic Machine Corp.**, Chicago, manufacturer of skin- and blister-packaging machinery. The company has set up three subsidiaries in New York, at 30 Prince St., Brooklyn 1. The new companies are: **Abbott Eastern Plastic Machine Sales**, machinery distributor for a six-state territory; **Vis-a-Pak Corp.**, custom packager of products in skin packages, and **Merlon Paper & Converting Corp.**, supplier of board for skin packages. Pres. and sales mgr. of the new facilities is **C. H. Borenstein.**

St. Regis Paper Co., New York, will purchase **Chemical Packaging Corp.** of Savannah, Ga. Chemical Packaging makes multiwall paper bags primarily for chemical fertilizer at its Savannah and Louisville plants.

A new film-extrusion plant has been put into operation by **National Plastic Films, Inc.**, Ottawa, Kans. Film will be produced by the chill-roll casting method. According to pres. **Charles S. Imig**, initial production capacity will be 1,000,000 lbs. of polyethylene per year. Nylon and polypropylene film also will be produced as markets develop, says Mr. Imig.

Arthur Colton Co., Detroit, is expanding its production facilities following the recent purchase of **Hope Machine Co.** and a manufacturing agreement with **Alpha Engineering Works** to make aerosol filling equipment. A new plant is being constructed at Elk Rapids, Mich.

Crescent Ink & Color Co. of Pennsylvania, Philadelphia, has purchased the ink-manufacturing facilities of **Joseph F. Kelly, Inc.**, St. Louis. To be known as **Crescent Ink, Inc.—Kelco Div.**, it will be operated as a sub. of the parent company.

Montecatini, a major Italian chemical concern, plans to build its first U. S. plant near Huntington, W. Va. The $10,000,000 plant will produce polymers for the plastic and textiie industries.

Facilities for manufacture of high-impact and conventional polystyrene are being built at Joliet, Ill., by **Amoco Chemicals Corp.** Commercial production is scheduled to start in 1961.

Frank W. Egan & Co., Somerville, N. J., has leased an additional 16,000 sq. ft. of floor space to allow expansion of

Color comes to life on LusterBoard

A LusterBoard package really stands out on a crowded store shelf. Warren's LusterBoard has a mirror-like surface that shows through halftone screens, makes color prints sharp and clear. It adds life to metallic and high-gloss inks. In addition to providing maximum quality in halftone reproduction, LusterBoard affords smooth folding, exquisite embossing, and fast press handling — in a boxboard of unusual strength. Details, sample boxes, etc. are available from *S. D. Warren Company, 89 Broad St., Boston 1, Mass.*

Warren's
Printing Papers

LusterBoard

This is LusterBoard, 14 pt. Other thicknesses: 16, 18, 20, 22 points

Your sales
GROW and GROW
with
CAMEO
Tags
Labels
Seals
foil
paper
printed
embossed
die cut
gummed
heat seal
pressure sensitive
Specialists in Fine Foil, Printing and Embossing
CAMEO
DIE & LABEL CO.
154 W. 14th Street • New York 11, N.Y.
in Canada:
Cameo Crafts Inc. 157 St. Paul St. West, Montreal 1

Plants & People [*Cont'd*]

facilities for manufacturing paper converting equipment and plastics-processing machinery.

Arkell & Smiths' recent 100th-anniversary celebration coincided with the completion of transfer of all activities to the company's plant at Hudson Falls, N.Y. The plant's increased facilities are geared to an output of 400 million bags per year.

Inlander-Steindler Paper Co., Chicago, reports that it has merged its former subsidiary operation, **Packaging Corp. of America**, as a division. The folding-box operation will now be known as the **Paco Div.**

Pyrometer Co. of America, Inc., Penndel, Pa., has established a new div. for custom molding expandable polystyrene. **William L. Parson, Jr.**, will be in charge of the new **Pycofoam** division.

New mailing address for **F. N. Burt Co.** is P. O. Box 995, Buffalo, N. Y. Manufacturing facilities and offices are now located at 2345 Walden Ave. in Buffalo.

General Foods Corp., White Plains, N. Y., plans to build a new carton plant at Saratoga Springs, N. Y.

Kehr Products Co., Philadelphia, is constructing a new headquarters office and plant at Willow Grove, Pa. The new location will provide a 50% increase in space for Kehr's flexible-packaging manufacturing operations.

The Lord Baltimore Press, New York, recently started operations at its new folding carton plant at Clinton, Iowa. In addition to regular manufacturing processes as employed at the company's other locations, the new, 150,000-sq.ft. facility has a six-color lithography press.

A new plant for the production and development of thermoplastic molding and extrusion materials is to be built at Slatersville, R. I., by **Plastic Materials & Polymers, Inc.**, Hicksville, N. Y.

The Eastern district sales office of the Cosmetic Container Div. of **Scovill Mfg. Co.** has moved from New York City to Waterbury, Conn.

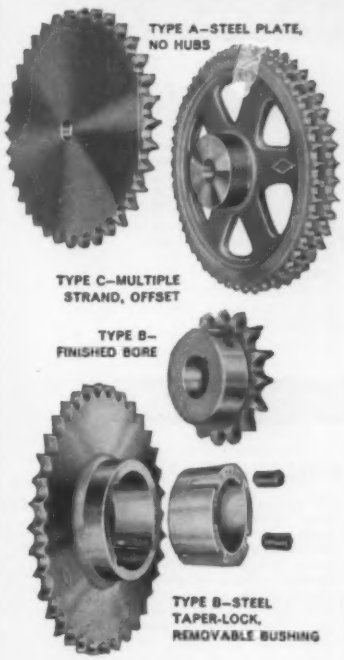
Promotions

Richard Cory: to director of marketing, **Bostrom Corp.**, Milwaukee. Bostrom makes molded polyurethane foam cushioning for packaging.

Greg H. Brown: to sales mgr., beverage industries, Los Angeles branch, **Owens-Illinois Glass Co.**, Toledo, O.

Kenneth F. Rupp: to asst. to the New York regional sales mgr., multiwall-bag div., **West Virginia Pulp & Paper Co.**, New York. **John Floyd:** to tech. service rep. for the division.

Robert E. Lambert: to Pittsburgh district sales mgr., Eastern Metal Div., **Continental Can Co.**, New York. He

FOR EVERY NEED
DIAMOND
MINIMUM BORE AND READY-TO-USE
STOCK SPROCKETS


Write for Stock Roller Chain and Sprocket Catalog
Get complete information on DIAMOND'S full line of sprockets available from your Distributor's stock! New catalog contains dimensions and list prices; bushing installation and removal instructions. Write for your copy today!
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Indianapolis 7, Indiana

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SHEET PLASTIC FABRICATING MACHINES

Save you money!

BEAD 2 EDGES AT ONCE

DUAL-EDGE BEADER

Simultaneously beads both edges of plastic sheet, roll, die cut blanks and strips, .005" to .020" thickness, 2" to 20" wide. Nine different beads and Specials! High speed production! 500" to 1,000" per MINUTE. Each head can be used independently as a single edge beader if desired.

700 FOLDS PER HOUR

FOLDER-CREASER

This dual-purpose 30" sheet plastic fabricator gives you the advantages of TWO machines at ONE price. The Folder-Creaser handles sheets .003" to .020". Folds minimum of 700 per hour at 180° and "instant creases" 90° angles at minimum of 1200 per hour without rejects, tearing or opening up.

FASTER BLISTER PACKAGING

BLISTER-EDGE FOLDER

Performs 180° edge folds at rate of 600 to 1200 folds per hour on blister packages made from thermoplastic sheet from .003" to .020" in thickness. Heated 18" blade actually molds sheet into desired fold to accommodate slide-in cardboard bottom. No tearing or opening up.

WRITE FOR LITERATURE *describing folding, creasing, beading, drawing and forming machines.*

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for clear, skin-tight packaging of

MEAT

(and a variety of products)

new shrinkable, oriented

REYNOLON®

PVC FILM

New Reynolon oriented PVC film offers an ideal solution to better, less costly packaging of many food items—meats, poultry, cheese, fruits, vegetables plus a wide variety of other items such as window shades, stationery supplies, paper products and others.

In addition to economy this new Reynolon film also offers you these advantages: It is crystal clear. It is shrinkable—provides a skin-tight package. It has high tensile strength, offers low temperature flexibility, has good shelf life. It is printable and sealable by heat or by adhesives. It can be metalized. It is easily laminated to paper, chipboard and other materials.

For details and technical assistance on Reynolon films, contact the Reynolon Plastic Specialist in the Reynolds office in New York, Camden, Detroit, Chicago, St. Louis or Los Angeles. Or write *Plastics Division, Reynolds Metals Company, P.O. Box 2346-RM, Richmond 18, Virginia.*

REYNOLON PLASTIC FILM

PLASTICS DIVISION
REYNOLDS METALS COMPANY

Plants & People [*Cont'd*]

succeeds **Paul A. Loofbourrow**, retired. **Hazen P. Master** and **James K. Cooper**: to asst. products sales mgrs., Metal Div.

John F. Lynch: to Central regional sales mgr., **Olin Aluminum**, div. **Olin Mathieson Chemical Corp.**, New York. **David J. Phillips** succeeds Mr. Lynch as Chicago district sales manager.

Charles A. Godsell: to Eastern regional mgr., **Shawinigan Resins Corp.**, Springfield, Mass.

Ambrose Y. Frantz: to v.p., **Turner Tube Corp.**, Highland Park, N. J.

Earl L. Bradley: to asst. sales mgr., folding cartons, national accounts, New York, **Container Corp. of America**, Chicago. **Cyron Snyder**: to director, design laboratories, West Coast.

Howard E. Long, Jr.: to regional sales mgr., Memphis Div., **Dixie Wax Paper Co.**, Dallas, Tex. **Oliver Mark**: to regional sales mgr., **Dixie of California**.

Joseph Donnelly: to sales mgr., Miami Div., **Mead Containers, Inc.**, Cincinnati, sub. **The Mead Corp.**

Russell K. Canfield: to asst. district sales mgr., New York, **The Dobeckmun Co.**, Cleveland, div. **Dow Chemical**.

Joseph F. Flavin: to district mgr., New England, Reed-Prentice Div., **Package Machinery Co.**, E. Longmeadow, Mass.

Noel Burks: to sales mgr., **Plas-Ties Co.**, Santa Ana, Calif. The company makes vinyl-and-wire bag closures.

Henry M. Greenhouse: to tech. director, **Columbia Box Board Mills**, Chatham, N. Y.

Appointments

Eugene W. Fichter: from **Owens-Illinois Glass Co.** to mgr. of West Coast manufacturing operations, **Hazel-Atlas Glass Div., Continental Can Co.**, New York. He succeeds **John K. Carnahan**.

Jerry Lamb: to div. mgr. for sales development, **Packers Package, Inc.**, Muncie, Ind. The company is a manufacturer of waxed containers.

Dr. William P. Utermohlen, Jr.: to tech. director, **The F. G. Findley Co.**, Milwaukee, maker of adhesives for packaging and paper converting.

Calvin A. Agar, Jr.: to mgr. of Eastern sales, **Wabash Fibre Box Co.**, Terre Haute, Ind.

Allan T. Walsh: from **Standard Packaging Corp.** to director of research, **Westfield River Paper Co.**, Russell, Mass. The company makes glassine, greaseproof and laminated papers.

James J. Lowe: to asst. sales mgr., **Derby Sealers, Inc.**, Derby, Conn.

Everett E. Lewis: from **Owens-Illinois Glass Co.** to Metropolitan New York sales mgr., **Metro Glass Co.**, Jersey City.

A cleaner, faster operation resulted as International Equipment Co., Boston, switched from excelsior (left) to Cel-Fibe wadding (right) to wrap motors, parts, test tubes, and dynamically balanced instruments in its line of precision centrifuges for laboratory uses.

CEL-FIBE® protective packaging doubles output, increases safety

"Cel-Fibe cellulose wadding is the best packaging material we have ever used," says C. Clifford Hodge, production coordinator for International Equipment, leading supplier of laboratory centrifuges, citing these improvements:

Savings in time, labor. An operator packs double the amount—Cel-Fibe wrapping takes only half as long.

Savings in materials. With Cel-Fibe, one carton holds as much as was formerly packed in two cartons or a wooden case. Cel-Fibe ends the need for separators to partition tubes, fragile parts, and glassware.

Savings on storage. Wadding, paper, and other packaging materials are kept with space to spare in a room that had previously been set aside for storing a ton of excelsior.

Savings in shipping weight. Cel-Fibe permits use of fewer, lighter cartons.

Savings in maintenance. Apart from easier handling, non-shredding and non-powdering Cel-Fibe leaves no dust in the air or dirt on the floor, reduces clean-up time . . . also makes it easier, faster, and less messy for customers to unwrap orders.

Savings on returns. Low-sulfur and neutral-pH Cel-Fibe guards metals from corroding and surfaces from marring, avoids return of centrifuges bent or unbalanced in transit.

Your packaging problems can probably be lessened by learning how "success is certain with Cel-Fibe" in meeting military specifications and civilian requirements for cushioning and surface protection. Cel-Fibe is always available, when and as you need it. For more information—*write, wire, or phone:*

CEL-FIBE

Division of Personal Products Corp.

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ONE OF THE Johnson-Johnson COMPANIES

TAKING GUESSWORK OUT OF PACKAGING DECISIONS

These top equipment engineers could be working on your packaging projects

Want an objective analysis of your present packaging operation? These crack equipment engineers will come into your plants and give you a complete report, plus recommendations. This is part of a Fibreboard program designed to help you make the best possible packaging decisions.

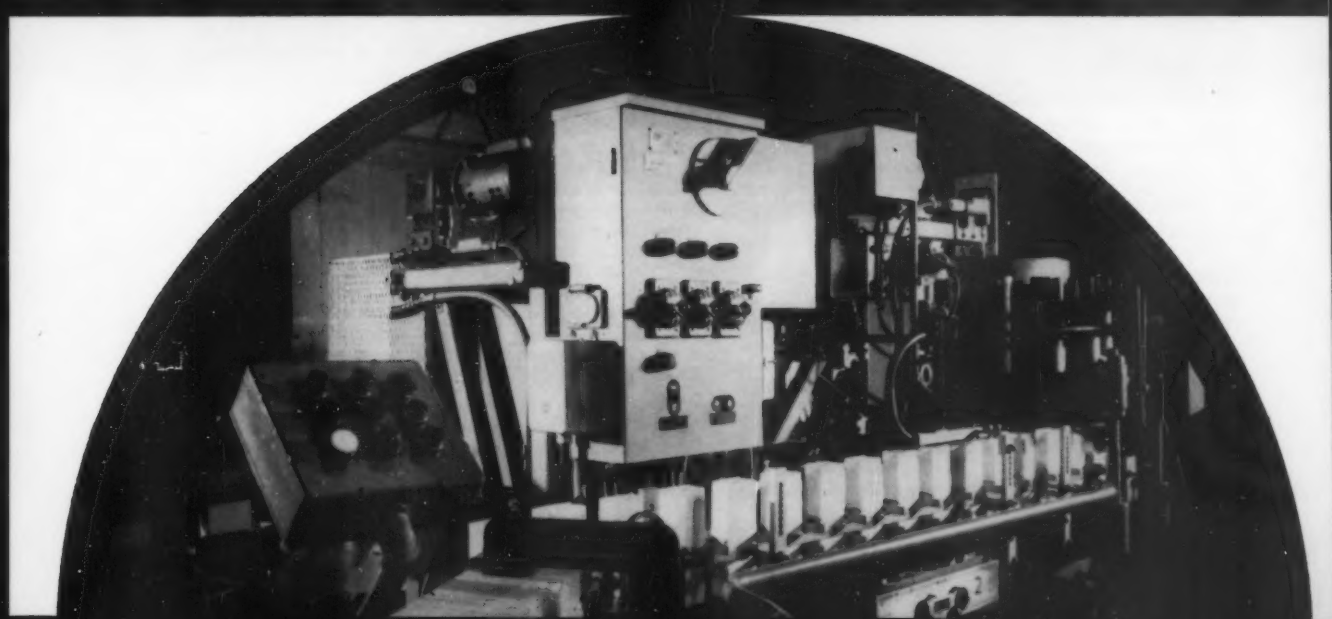
Today you can get expert help in market analysis, structural design, graphic design, package testing, and equipment engineering just by calling Fibreboard. Specialists in these fields will work with you, your package consultant, or advertising agency whenever you like.

This new, broader concept of packaging service can help you find new ways to package your products better, more efficiently, at lower cost. Use it. And when your packaging decision is made, let Fibreboard produce your folding cartons and shipping cases in the West's largest, most modern facilities.

Phone or write today for all the help you want!

FIBREBOARD

PAPER PRODUCTS CORPORATION San Francisco



Equipment & Materials

[*Continued from page 58*]

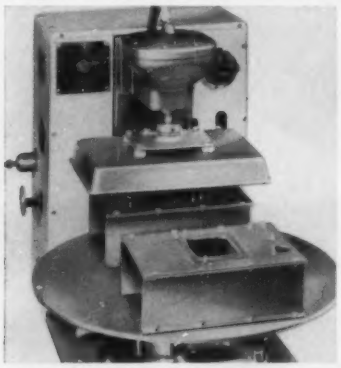
and handling of products with sharp, breakable or easy-to-chip surfaces, says Flex-O-Lators. The protective material, available in pre-cut lengths or rolls of any size, slips over edges up to ¾-in. thick, covering both sides of the surface up to a depth of 2 in. Its strong gripping action is provided by continuously looping spring-steel wire with good tensile strength. The wire is padded by several layers of waffled cushioning paper and an outer and inner cover of creped kraft-base paper. Lower material costs, speedier application and reduced product damage are among the advantages cited for the material. A sample of the material is included in a brochure showing various applications, which is available on request to the manufacturer. *Edg-Pak Div., Flex-O-Lators, Inc., Carthage, Mo.*

Labeling machines from abroad

Potdevin Machine has been named U. S. distributor of the Autotrex line of labeling machines, manufactured by Rawsons Ltd., Kent, England. The machines are designed to label glass, metal, plastic, paperboard and other containers from ½ oz. to 20 oz. capacity. Labels range in size from ½ in. to 4⅞ in. in height and ½ in. to 4¼ in. in width. The labelers are available in conventional-adhesive or heat-seal models. They are claimed to operate at speeds of 1,200 to 2,000 per hour. The labelers can accommodate regular or irregular shaped containers, ampules, collapsible tubes, paper packets and other packages or products. *Potdevin Machine Co., Teterboro, N.J.*

Bench-model blister packager

Erdco Engineering says that its new Clear-Pak Junior is designed to fill the need for a small, low-cost plastic-blister packaging machine. It is suggested primarily for short-run packaging jobs. Two features cited by the supplier for its bench-model unit are high speed and quick change-over from one size of package to another. The machine is reported to make a seal every three seconds; change-over is said to require less than 10 minutes. Hard and soft goods and granular products can be accommodated, in blister packages ranging up to 7 by 9 in. in size. Machine components include an air-pressure regulator, power drive controls and timer. The unit stands 21 in. high and fits in an 18-by-25-in. area. *Erdco Engineering Corp., Addison, Ill.*

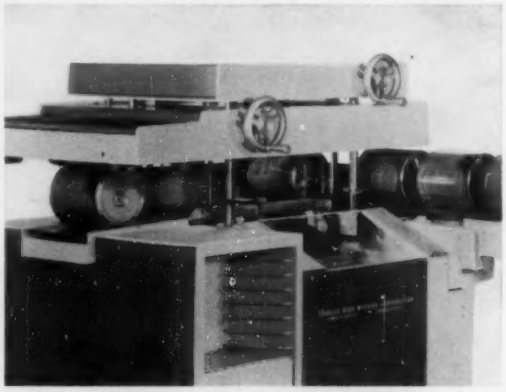


Electrostatic-charge detector

Simco's Electrostatic Locator Type E, designed for use by processors of plastics, paper and other materials, detects electrostatic charges and electrostatic induction. The presence of such charges, the supplier notes, not only constitutes a fire hazard, but frequently introduces production difficulties by causing erratic behavior of the material being handled. The portable device has a direct-reading meter with a graduated (from minus 10 to plus 10) linear scale. The meter is read simply by pointing the probe of the meter toward the charged object, which action will indicate the polarity and relative magnitude of the charge. Corrective equipment can then be applied where needed. *The Simco Co., Lansdale, Pa.*

Automatic can imprinter

Charles Beck Machine Corp. has introduced a new machine for imprinting any desired data on cylindrical containers ranging in size from ¼ pint to 1 gal. Only two settings are required—can diameter and height. Settings are made by external gauges and hand wheels. Operation is rated at 15 to 60 cans per minute. The machine's 8-by-11-in. plate or individual rubber type can be changed in minutes. The supplier claims that printing is accurately registered on every can that passes through and that printing results are equal to lithography in quality, clarity and fidelity. *Charles Beck Machine Corp., King of Prussia, Pa.*



Bottom-loading case packer

An automatic bottom-loading case packer for bottled goods is available from Barnes Co. Both the shipping case and the bottles are individually supported throughout their travel until case flaps are closed and glued. Bottles are raised by lifter fingers with slightly curved surfaces that cause the containers to fan out so that they enter case compartments with almost no contact with the dividers. This feature, the supplier points out, minimizes label-scuffing damage. The Model L-20 case packer accommodates a variety of bottle shapes and capacities, ranging from a half pint to one gallon. It is reported to operate at speeds of up to 20 cases of 24 bottles per minute. *W. F. & John Barnes Co., Rockford, Ill.*

Device for testing containers

A new container and package testing machine that reportedly enables tests to be made on a wide variety of materials is being made available by Testing Machines. The supplier's Model 49005 performs container-compression, stacking and manufacturer's-joint tests on cartons as large as 36 by 48 by 72 in. It has two strength ranges: 0-2,000 lbs. and 0-10,000 lbs. The machine is accurate to within 0.5% of full scale reading, the supplier says. It is equipped with an eye-level dial and deflection indicator and recorder. Special available features include a variable-speed drive and constant load arrangement to duplicate warehouse stacking force. *Testing Machines, Inc., Mineola, N.Y.*

Compression strapping machines

Signode Steel Strapping has introduced a new series of machines designed to compress and strap paper, multiwall bags and flat corrugated cartons into compact bales that

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Licks Sticking Problems

Extensive tests have proved Syl-off coatings won't contaminate, transfer, or migrate. In addition, papers coated with Syl-off have a natural nonoily lubricity—also have the high degree of water repellency characteristic of silicones. And there's price appeal in Syl-off coatings . . . often they cost less than ordinary release coatings; they last as long as the paper itself; and their light weight frequently means lower shipping costs.

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Introduced only recently, Syl-off coatings for paper and paperboard have already received wide acceptance. Understandably so when you consider their exclusive properties. Syl-off coatings offer the "let-go" that prevents even the most gooey product from sticking . . . asphalt, glue, resin base, rubber compound, adhesive . . . you name it. Applied to backing papers for pressure sensitive materials, Syl-off coatings provide free peeling . . . do not alter the adhesiveness in use.

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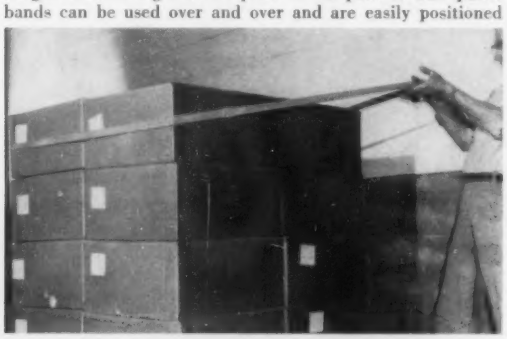
cost less to handle, store and ship. The equipment is available in two basic capacities for 6,000 lbs. and 16,000 lbs. maximum compression and in two models—the Model CS and the Model CSF. Both provide a mounting system for power tensioning and sealing tools. Loads up to 84 in. high, 72 in. long and 65 in. wide can be compressed and strapped. Optional is a turntable to facilitate steel strapping of the bundle in two directions. *Signode Steel Strapping Co., 2600 N. Western Ave., Chicago 47.*

Bag-making machine offered

A new Fischer & Krecke machine for making block-bottom bags from cellophane, foil or paper is available from the German machinery manufacturer's North American agent, Kenneth J. Moore & Co. The Model Combi-O makes bags ranging in size up to 4¾ in. wide by 11⅝ in. long. Speeds of up to 250 bags per minute, plus fast change-over time, are among the features cited for the new unit. A siftproof bag bottom can be made by a special attachment. Other attachments available include a flexographic printing station. *Kenneth J. Moore & Co., 1778 W. Estes Ave., Chicago 26.*

Rubber bands for palletizing

Giant rubber bands—measuring up to 6 ft. long and stretching to 18 ft.—are being offered by B. F. Goodrich Industrial Products as a simple, effective means for holding lightweight cartons together in piles or on pallets. The pallet bands can be used over and over and are easily positioned



by one man. According to the supplier, the bands save money by virtually eliminating breakage to cartons containing such lightweight, fragile items as electric-light bulbs, television tubes and toothpaste tubes. A band applied around the top layer of cartons will steady an entire pallet load of cartons, for additional protection against breakage, the company says. *B. F. Goodrich Industrial Products Co., Div. B. F. Goodrich Co., Akron, O.*

Line of pressure-sensitive stock

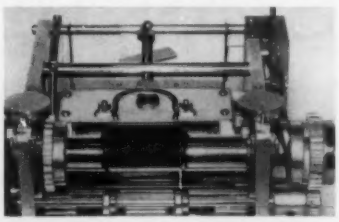
"Stixie" is the name given by Coated Products to its new line of pressure-sensitive stock. The stock is available in permanent- and removable-adhesive form. Cited characteristics of each include high tensile and tear strength, flexibility, printability and resistance to chemicals, heat, weather, moisture, oil and light. The pressure-sensitive stock can be applied manually or automatically to almost any surface—smooth or rough, porous or non-porous, flat or curved, says the firm. *Coated Products, Inc., Middlesex, N.J.*

Vial-drying and sterilizing tunnel

Burnet Co. has been granted exclusive import rights to the Höfliger & Karg line of specialized packaging units. The first product to be offered by the U.S. distributor is a drying and sterilizing tunnel for vials and ampoules, which reportedly can accommodate up to 14,000 units per hour. The vials or ampoules pass through the tunnel in a continuous three-stage process, either standing on a moving belt or neck down on a chain conveyor. The operation, which takes about one hour, includes drying, sterilizing under intense heat, and cooling. *The Burnet Co., Paramus, N.J.*

Portable label-printing press

A portable flexographic printing press that measures only 9 by 9 by 9 in. (without guard case) and weighs 40 lbs. has been introduced by Sohn Mfg. The unit—said to be the world's smallest—prints and die cuts on pressure-sensitive label paper, or score cuts on gummed, heat-seal or plain paper. It is reported to be easy to operate and to print up to 6,000 labels per hour. Colors and printing plates can be changed over in a matter of seconds, says the supplier. Pointing out that one roll of paper constitutes a complete label inventory, the company also claims that the device eliminates huge inventories, label obsolescence and holding up shipments while waiting for labels. *Sohn Mfg., Inc., Plymouth, Wis.*



Foam tape as package lining

A low-cost polyurethane-foam tape with a pressure-sensitive adhesive has been introduced by Richards, Parents & Murray. The inert, non-abrasive tape is designed for use as cushioning material to protect fragile products during shipment. The tape's pressure-sensitive adhesive reportedly makes a solid bond to the interior of metal, corrugated, fibreboard or other containers, and retains its holding properties in a temperature range from 0 deg. F. to 300 deg. F. *Richards, Parents & Murray, 312 Seventh Ave, New York 1.*

Device controls registration

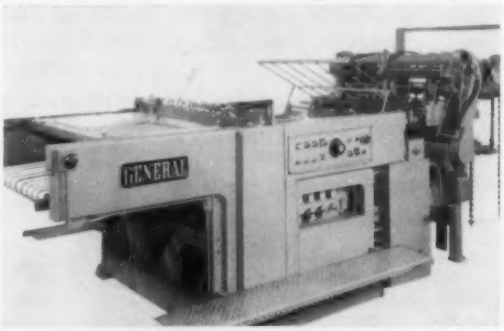
A dual-registration control device, designed to monitor two or more sets of variables in high-speed production operations, is available from Sterns Control. The attachment is reported to have various packaging-line applications. Among them, the supplier says, is maintaining proper alignment of two sets of registration marks on paper containers. The device consists of a remote-control indicator, a control chassis with electronic "logic" circuits and two registration mark pick-up heads. *Sterns Control Corp., Great Neck, N.Y.*

Addition to supplier's facilities

A new extruder-coater machine is being used for the production of cast polyethylene film at its San Leandro, Calif., plant, reports Western-Waxide. The unit also can be used to apply a thin layer of polyethylene to a running web of such materials as film, foil, glassine and paper. And it can be used to coat such heavier materials as food board. According to the company, the machine is convertible to production of cast film in widths up to 60 in. by shifting from laminating rolls to chilled casting rolls. *Western-Waxide Div., Crown Zellerbach Corp., San Leandro, Calif.*

New line of silk-screen presses

A new Series C line of silk-screen presses for decorating paperboard, tinplate, aluminum, plastics and other packaging materials is available from General Research & Supply. The units feature automatic-feed operations at reported



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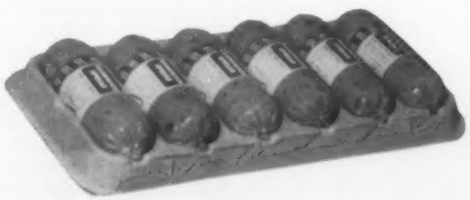

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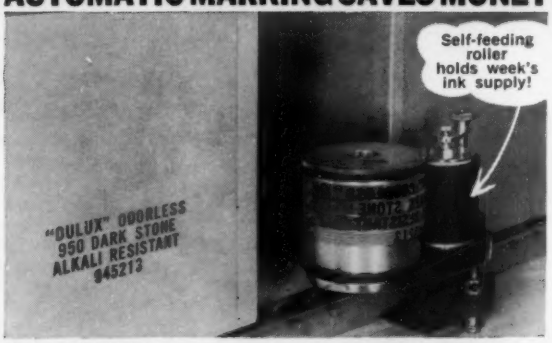

New ROLACODER conveyor and case-sealer attachment marks boxes, cartons, drums, filled bags automatically

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Equipment & Materials [*Continued*]

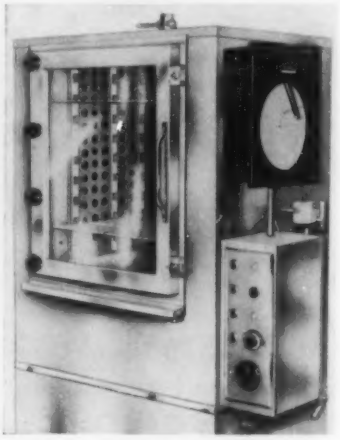
speeds of up to 1,800 sheets of material per hour. The three models offered accommodate sheets ranging in size up to 36 by 36 in., 36 by 44 in. and 36 by 48 in. Feeders can be reloaded while the press is operating. According to the supplier, the new presses are designed to handle all inks, adhesives, functional coatings and other formulations made from silk-screen application. The mechanical-design principle of line-contact impression is claimed to permit clear, detailed printing over the entire sheet area. *General Research & Supply Co., Grand Rapids, Mich.*

Rental plan for skin-packaging unit

Abbott Eastern Plastic Machinery Sales is offering a rental plan for the Model SP500 skin- and blister-packaging machine manufactured by Abbott Plastic Machinery Corp., Chicago. The unit has a 20-by-20-in. forming area and will drape up to 5 in. It is said to be capable of two shots per minute, with actual production speed dependent on the size of the package unit. Rental and other details are available from the supplier. *Abbott Eastern Plastic Machinery Sales, 30 Prince St., Brooklyn 1.*

Test chamber for packaging materials

A controlled-humidity and temperature chamber for laboratory testing of packaging materials (including plastics and metals) is being made available by Electric Hotpack. The new device is claimed to perform accurate water-vapor-transmission and shelf-life tests. It has a temperature range of 32 deg. F to 212 deg. F. and a humidity range of 20% to 98%. A door window in the chamber allows continuous observation of the test article. A sensitive recording device on one side of the chamber assures maintenance of uniform temperatures and humidities. Temperature and humidity systems are built into the unit. To obtain humidity, conditioned water is forced through jets against a vaporization plate and is then mixed with heated air. The amount of water vaporized is infinitely variable to obtain control within 5% relative humidity, says the supplier. A built-in refrigeration unit provides cold temperatures. *Electric Hotpack Co., Cottman Ave. at Melrose St., Philadelphia 35.*



Improved paperboard produce basket

Andre Paper Box reports that it has added the features of visibility and ventilation to its line of handled "Pak-A-Long" paperboard carry-home baskets for produce. According to the supplier, tests have proved that slots in the container improve the sales appeal of packaged fresh fruit and also let customers see just what they are getting, minimizing the instances of shoppers probing into the bottom layers of fruit. The produce containers are offered in a leaf-green color, which the supplier says, is the color that best complements most fresh fruits and vegetables. *Andre Paper Box Co., San Leandro 1, Calif.*

Economical two-color cylinder presses

Two new Original Heidelberg two-color cylinder presses have been introduced. The supplier reports that the presses require no more floor space than do single-color models and are priced only slightly higher than equivalent-size single-

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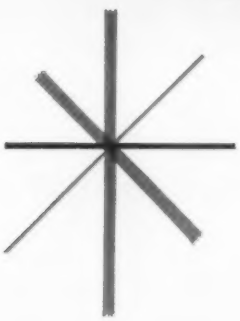

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Practical Products Co.
319 Jefferson St.
Juniper 7-1257

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A. C. Foster
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Evergreen 2-7555

KANSAS CITY 5, MO.
A. B. Mason
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Victor 2-6580

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Garden 5-5850

MINNEAPOLIS, MINN.
J. E. & J. L. Moor
3329 Dupont Ave., So.
Taylor 4-5309

ROCKFORD, ILL.
Blackhawk Paper & Cordage
630 Cedar St.
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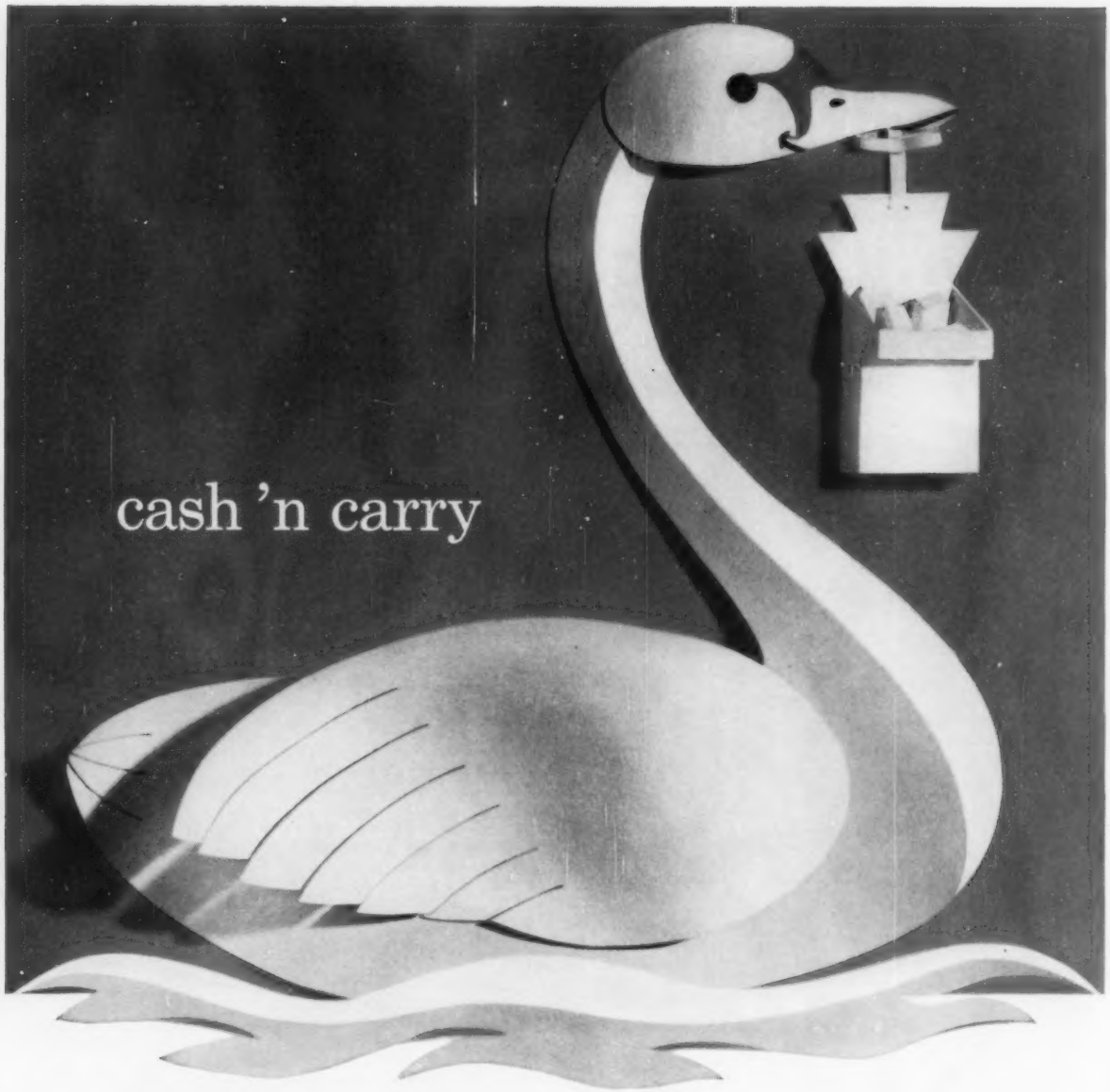

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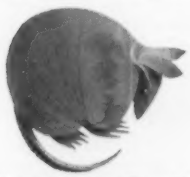
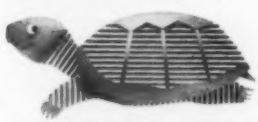

Kraftsman Dura-Bend Liner

Kraftsman Dura-Corr

Kraftsman Superliner

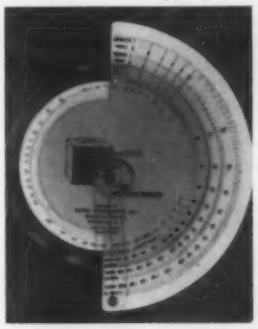

Kraftsman Weather-Tite Liner

Equipment & Materials [*Continued*]

color presses, thereby putting two-color printing facilities within the reach of small and medium-sized plants. One of the new models can accommodate sheet sizes ranging from 4⅛ by 5⅞ in. to 15 by 20½ in. The other handles sheet sizes ranging from 4½ by 6⅝ in. to 21¼ by 28⅜ in. Rated operating speeds are 5,000 sheets per hour and 4,000 sheets per hour, respectively. *Heidelberg Sales & Service, 73-48 Woodhaven Blvd., Glendale 27, N.Y.*

Device calculates container cube

Claimed to be the fastest and most accurate calculator ever invented for computing the cubic contents of shipping containers is Cubic Calculator Co.'s "Cube-Master." The all-plastic measuring device is 7½ in. in diameter and less than ⅛ in. thick. It consists of three concentric disks calibrated from five to 200 in. An exact reading in cubic feet can be obtained by moving an indicator arrow to the specified length, width and height of the container to be measured. The device also can be used to calculate the board feet in the shipping container. This reading is especially useful in estimating shipping-container costs, the supplier says. *Cubic Calculator Co., Glendale, N.Y.*

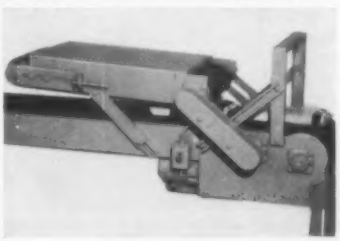


High-speed checkweigher

Checkweighing speeds of up to 275 units per minute, with consistent accuracy within 1/25 oz., can be maintained on its Model 525 checkweighing machine, says Illumitronic. The device reportedly requires no change-over to accommodate different package sizes. The supplier says that the new unit's continuous-motion weighing-and-rejection action, coupled with its resistance to water and dust, make it suitable for use on almost any existing production line. *Illumitronic Engineering, Sunnyvale, Calif.*

Bag flattener facilitates storage

Now being offered by New London Engineering is a device for flattening bags as they come from the filling machine. The flattened bags can then be firmly stacked, palletized or stored in the least possible space, the supplier points out. The company's Type 32 machine is basically a conveyor with an inverted power feeder. The exact amount of bag-flattening compression required can be achieved by adding extra weight to the shelf under which filled bags are forced by the action of upper and lower conveyor belts. The unit is available in belt widths ranging up to 24 in. *New London Engineering Co., New London, Wis.*



Air-operated screw capper

An air-operated screw capper that applies all types of molded or metallic lug or screw caps to glass, metal or plastic containers is offered by Scientific Filter. The Model CFV is reported to cap up to 50 containers per minute. Uniform cap tightening is achieved via an adjustable friction clutch on the bench-mounted machine which is designed to provide any closing torque required for all sizes of caps. This feature, the supplier says, eliminates "breathers" and prevents product spoilage or loss through evaporation. *Scientific Filter Co., 56A Rose St., New York 38.*

For Your Information

The **Containers & Packaging Div.**, Business & Defense Services Administration, U.S. Dept. of Commerce, has published a midyear review and 1959 outlook for each of four packaging-supply industries. The report on the glass-container industry reveals that shipments in 1958 were substantially the same as the all-time record established in 1957 and that 1959 shipments will exceed 1958 figures by about 6%. In the folding-carton industry, the Government report states that production in 1959 will exceed 1958 production by 3 to 5%, for a new record. Government figures reveal that sales of converted flexible packaging products increased 20% from 1955 through 1958 and that a 10% sales gain from 1958 can be expected this year. As for the fibre-box industry, the first quarter of 1959 was the best in history. According to the report, 1959 production will be 7% greater than in 1958.

Production in 1958 of plastic bottles and tubes reached a record of 440,811,000 units, an 8% increase from 1957. This figure, released by the **Plastic Bottle & Tube Mfrs. Institute, Div. The Society of the Plastics Industry,** covers plastic bottles and tubes with a capacity of 1 gal. or less, manufactured by members of the Institute. Members of PBTMI account for about 80% of total industry production.

At a meeting in Chicago on June 21, the **Society of Packaging & Handling Engineers** drew up plans for several projects designed for greater service to members and to industry. Plans for educational and industry service activities were discussed, as were final plans for a renewal of SPHE's Packaging and Handling Competition. **John Mount,** pres. of the organization, reports that SPHE's National Education Committee is preparing several projects aimed at assuring an adequate future supply of packaging and handling technicians.

The first General Assembly of the **International Council of Societies of Industrial Designers** is being held in Stockholm, Sweden, Sept. 16-18. The assembly brings together representatives of ICSID member societies from 12 nations. The U.S. is represented by **American Society of Industrial Designers** and the **Industrial Designers Institute.**

Sales of beer in cans rose 296% from 1947 to 1958. In the latter year, canned beer accounted for about 38% of all packaged beer, compared with 11% in 1947. These figures are from a new 28-page report, "Consumer Preference in Beer Packaging," which is available from **Continental Can Co.** The study also reveals that the sale of beer in non-returnable containers (both cans and bottles) has risen from 13.2% of all packaged beer in 1947 to 44% in 1958. Cans account for 87% of all non-returnable volume. Copies of the report can be obtained without charge from local ConCan representatives, or by writing to Bruce Petersen, Continental Can Co., 100 E. 42 St., New York 17.

The National Canners Assn. has published its *1959 Canners Directory*. The volume lists NCA members and other commercial canners, including their addresses, factory locations and products packed by each. Copies of the directory, at $3.50, are available from association headquarters, 1133 Twentieth St., N.W., Washington 6, D.C.

The Packaging Institute is making a special inventory-reduction offer of its *Glossary of Packaging Terms*. The hard-cover, 323-page book is now available at $3 per copy. PI also is offering a new manual titled *Trouble Shooting Label Blisters*. Designed as an aid for quick analysis of blister problems, it includes a number of test and inspection methods. A pocket-size check list can be detached from the main text for on-the-spot use. Price per copy for PI members is $1; for non-members, $1.50. Both publications can be obtained from the PI office, 342 Madison Ave., New York 17.

As part of its *Small Business Bulletin* series, the **Small Business Administration** has published a 24-page booklet titled "Containers and Packaging." It is a bibliography of sources of information pertinent to packaging materials and containers for all types of materials and products. Single copies are available without charge by writing to the Small Business Administration, Washington 25, D.C.

A two-day conference on packaging specifications will be held at Purdue University, Oct. 5-6. The conference will be coordinated by packaging consultant **Charles J. Zusi.** Additional details are available from Mark E. Ocker, Div. of Adult Education, Purdue University, Lafayette, Ind.

Clark H. Morian, Jr., has been elected chairman of the Special Food Board Group of **National Paperboard Assn.** He also has been re-elected a director. Newly elected directors of NPA are **James S. Benton** of Champion Paper & Fibre Co. and **J. C. Mulholland** of Crossett Paper Mills.

Three reports of packaging research for the Armed Forces are being released to industry through the Office of Technical Services, **U.S. Dept. of Commerce.** "Standardization Study of Long-Term Storage Process: Strippable Film Container" is a 20-page report which favorably evaluates strippable plastic containers as substitutes for dehumidified warehouse storage. (Order code: PB 151295; price: 75 cents.) "The Cushion Factor-Stress Curve and its Value for Classifying and Selecting Package Cushioning Materials" in 51 pages presents data on compressive efficiency and variability of common cushioning materials. (Order code: PB 151547; price: $1.50.) "Evaluation of Gas-Transmission Rates of Flexible Packaging Materials" is a 143-page study of the permeability of packaging films under a variety of typical conditions. (Order code: PB 151-124; price: $2.75.) Use the order codes in writing for these reports. Write to Office of Technical Services, U.S. Dept. of Commerce, Washington 25, D.C.

The Aluminium Development Assn. of England is offering a book titled *A Symposium on Aluminium in Packaging*. Liberally illustrated, the 188-page volume is a presentation in print of a symposium conducted in London on June 12. Following the format of the actual symposium, the book is divided into two

Events

Sept. 6-12—**Seventh Educational Graphic Arts Exposition,** Coliseum, New York.

Sept. 8-18—**British Institute of Packaging,** international exhibition and convention, Olympia, London.

Sept. 13-16—**Produce Packaging Assn.,** annual convention and exposition, Sheraton Hotel, Philadelphia.

Sept. 15-17—**Technical Assn. of the Pulp & Paper Industry,** 9th corrugated containers conference, Jung Hotel, New Orleans.

Sept. 16-18—**Packaging Machinery Mfrs. Institute,** annual meeting, Equinox House, Manchester, Vt.

Sept. 21-23—**Technical Assn of the Pulp & Paper Industry,** 14th paper-plastics conference, Edgewater Beach Hotel, Chicago.

Sept. 27-29—**National Fibre Can & Tube Assn.,** semi-annual meeting, The Broadmoor, Colorado Springs, Colo.

Oct. 1-2—Annual **National Hardware Show,** Coliseum, New York.

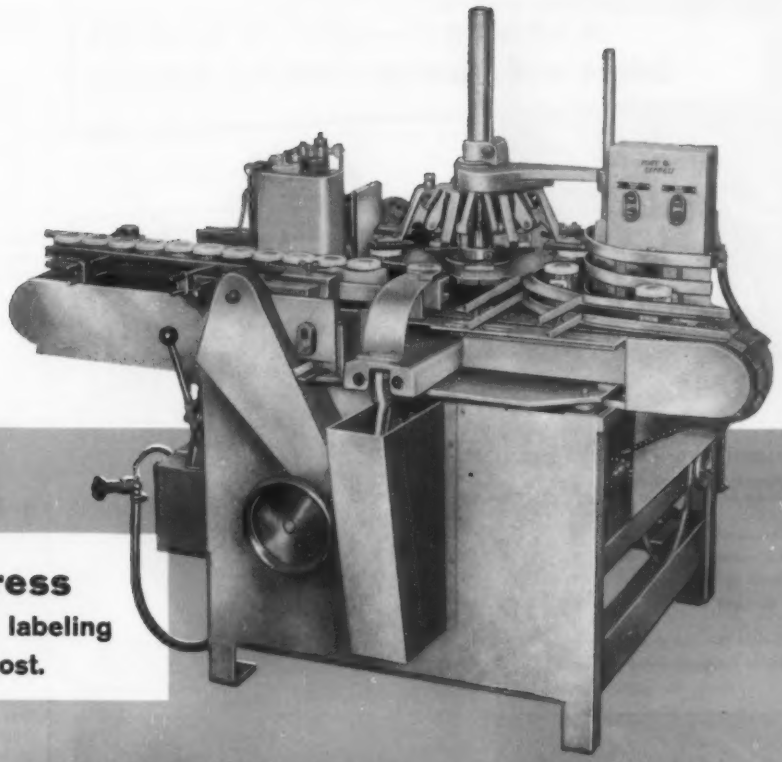
Oct. 5-6—**Conference on Packaging Specifications,** Purdue University, Lafayette, Ind.

Oct. 7-9—**Fibre Box Assn.,** annual meeting, Waldorf-Astoria, New York.

Oct. 12-15—**Technical Assn. of the Pulp & Paper Industry,** 14th engineering conference, Penn-Sheraton Hotel, Pittsburgh.

Oct. 16-25—**French Packaging Institute,** 13th packaging and point-of-sale show and 9th packaging congress, Paris.

Oct. 25-28—**National Flexible Packaging Assn.,** fall meeting, Greenbrier, White Sulphur Springs, W. Va.



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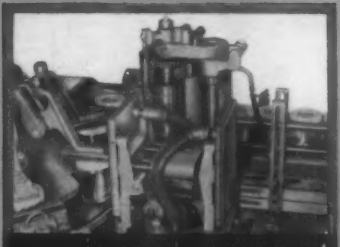

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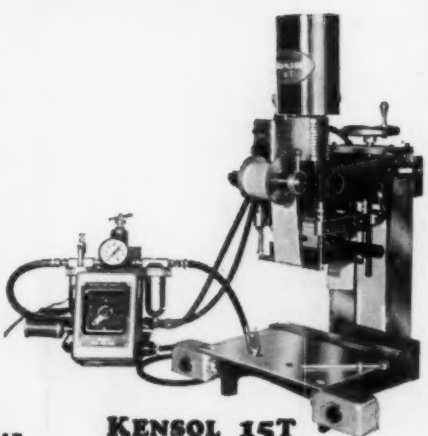

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F.Y.I. [*Continued*]

sections: "Aluminium as a Packaging Material" and "The Uses of Aluminium in Packaging." The former includes three papers dealing with the material's packaging characteristics, economic considerations and design. The latter includes five papers on cans for processed foods, general-line containers, collapsible tubes, foil and closures. Price of the book is $2.10. Contact The Aluminium Development Assn., 33 Grosvenor St., London, W.1, England.

The third annual **Package Design Workshop** will begin at Pratt Institute on Tuesday evening, Sept. 22 and will continue for 15 consecutive Tuesday evenings. The director of the workshop is package designer and consultant **Robert I. Goldberg.** Registration will be held during the week of Sept. 7 at Pratt Institute Evening Art School, 221 Ryerson St., Brooklyn.

Two major projects are being developed by the **Pulp & Paper Prepackaging Assn.,** an organization of companies producing trays and boards for the display of fresh meats and produce in self-service stores. The projects are: standardization of sizes and nomenclature, and education of clerk-service stores to the merchandising advantages of self service. President of PPPA is **H. D. Archibald** of Keyes Fibre Co.

A 98-page booklet, "Terms and Definitions for the Weighing Industry," has been published by **Scale Mfrs. Assn.** It is an expansion of a booklet published in 1956 and includes data on mechanical weighing as well as load-cell and electronic weighing. Copies of the booklet, at $1 each, are available from Scale Mfrs. Assn., One Thomas Circle, Washington 5, D.C.

L. P. Raubenheimer has been re-elected pres. of the **National Paper Box Mfrs. Supplies Assn.** Mr. Raubenheimer, pres. of Peter Partition Corp., also has been elected a director of the **National Paper Box Mfrs. Assn.**

As part of their training to become packaging consultants, 10 European businessmen recently spent a week making a survey of production and packaging facilities in Michigan. As part of the itinerary, they spent a day at Dow Chemical Co.'s plant at Midland. The European packaging observers (from Austria, Denmark and Norway) were headquartered at Michigan State University during their stay.

American Society for Testing Materials held its 62nd annual meeting June 22-26 in Atlantic City. A highlight of the meeting was a two-session Symposium on Education in Materials, sponsored jointly by ASTM and the **American Society for Engineering Education.**

Members have been named for eight standing committees of the **Folding Paper Box Assn. of America.** They will

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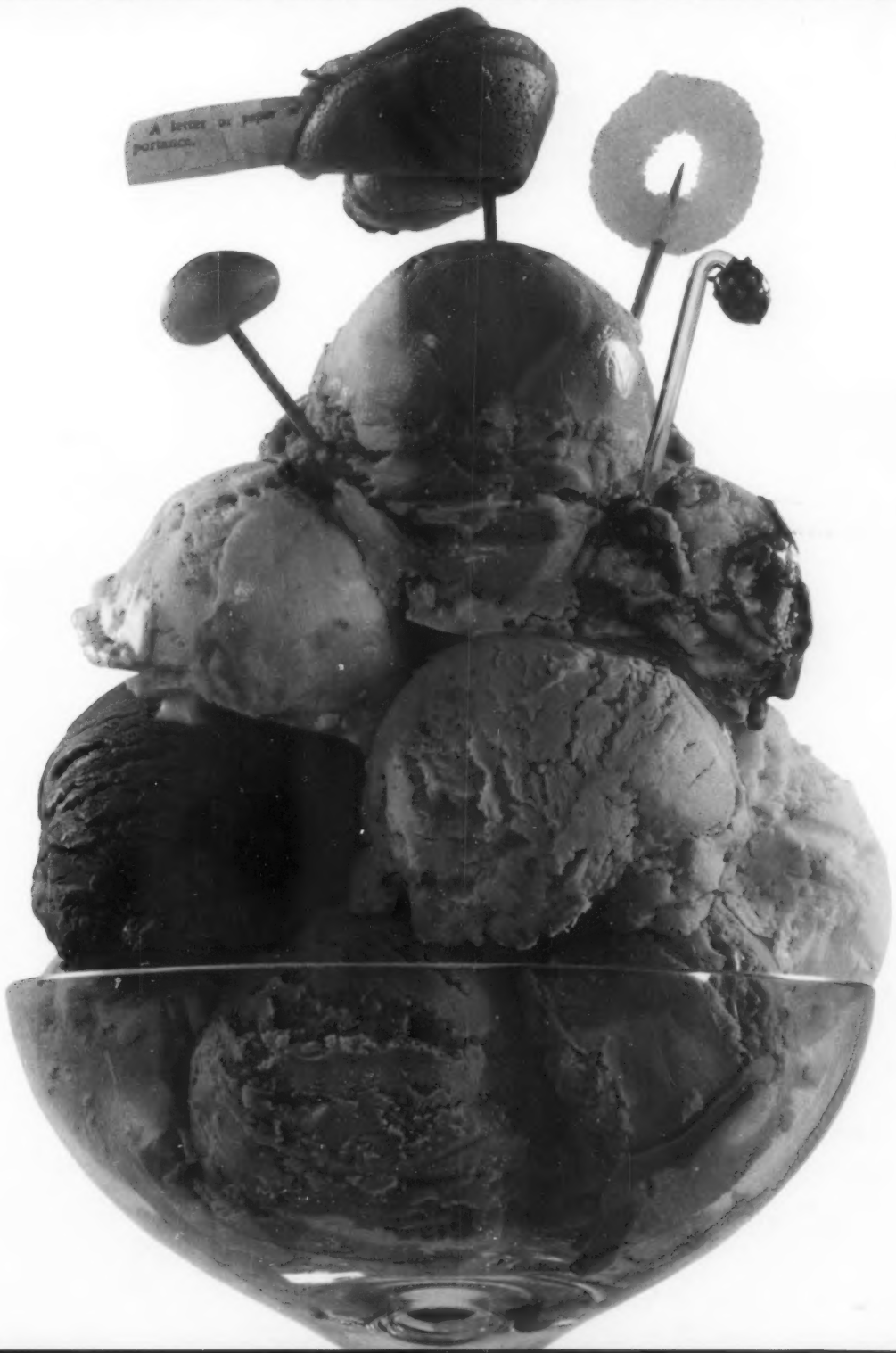

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serve until FPBAA's 1960 annual meeting next March. The committees and their chairmen are: Accounting, **Donald Boylan,** The Ohio Boxboard Co.; Bakery Package, **S. G. Ellis,** Marathon, Div. American Can Co.; Industrial Relations, **Carl Geisler,** Marathon; Public Relations, **Herbert C. Bernard,** Shuttleworth Carton Co.; Retail Box, **Edward M. Deane, Jr.,** Wolverine Div., American Box Board Co.; Statistics, **Joseph D. Caimi,** Associated Folding Box Co.; Technical and Production, **John Redpath,** Chicago Carton Co., and Traffic, **Jules W. Deininger,** Diamond Gardner.

A device for calculating polyethylene film and bag measurements has been developed by **U. S. Industrial Chemicals Co.** Similar to a slide rule, but less complicated, it makes possible rapid computation of a variety of data. The item can be obtained, free of charge, by writing to U. S. Industrial Chemicals Co., 99 Park Ave., New York 16.

Gustav L. Nordstrom, exec. director of the **Folding Paper Box Assn. of America,** has been appointed to the Board of Regents of the **Institutes for Organization Management** by the U.S. Chamber of Commerce. The IOM comprises three-year summer courses in management at major American universities.

United States Testing Co. has established a panel of professional psychologists in 26 countries around the world. The aim is to make possible international field work in problems of consumer-attitude measurement, the company says. Work planned for the panel includes measurement of package design and advertising response.

Alvin A. Abramson of Central States Paper & Bag Co. was re-elected pres. of **Industrial Bag & Cover Assn.** at the group's ninth annual meeting.

A special anniversary edition of *Maralog,* its company magazine, has been published by **Marathon, Div. American Can Co.,** which is celebrating its 50th year in business. The special 44-page issue depicts, in photographs and text, the company's development since its founding in 1909.

Ideas in Merchandising is the title of a new periodic mailing piece being sent to users of corrugated board and carton stocks by **Grand-City Container Corp.,** North Bergen, N.J. The contents are case-history presentations showing how the materials have been used to solve various packaging problems.

A standardized design for pint and ½-gal. rectangular ice-cream cartons has been agreed upon by filling-machine suppliers, the **Paraffined Carton Research Council** and the **International Assn. of Ice Cream Mfrs.** An important benefit to ice-cream packagers is that cartons from different suppliers can be used interchangeably on the same machines, it is pointed out.

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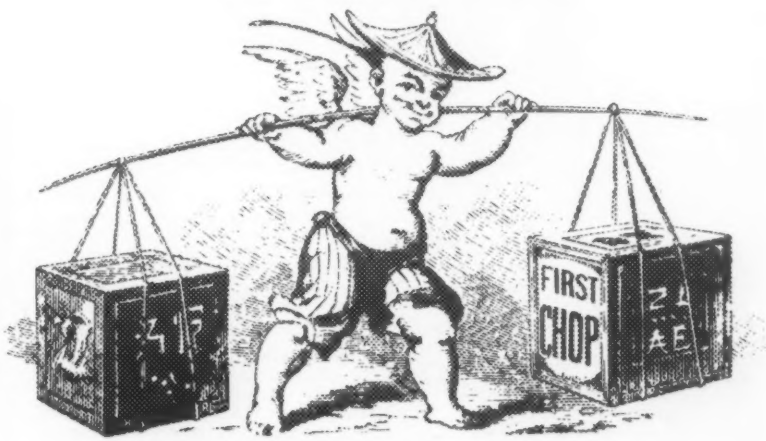

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U. S. Patents Digest

This digest includes each month the more important patents of interest to packagers. Copies of patents are available from the U. S. Patent Office, Washington, D. C., at 25 cents each in currency, money order or certified check. Postage stamps are not accepted. Edited by H. A. Levey.

Apparatus for Filling, Folding and Closing Containers of Paper, Paperboard or the Like, Gunther Meyer-Jagenberg (to Jagenberg-Werke Akt.-Ges., Dusseldorf, Germany). U.S. 2,888,794, June 2. An apparatus for filling and closing containers of paper, paperboard or the like carton-forming material and which containers are of the type that include an upper wall structure extending above a multi-sided filling level.

Device for Folding Paper to Form the Block Bottom of a Paper Bag, Zaver Dambacher (to Windmoller & Holscher, Lengerich, Germany). U.S. 2,888,859, June 2. An automatic bag-bottom-forming apparatus, including a conveyor consecutively moving bag tubes having at least one of their open ends perpendicularly bent up.

Carton-Filling Apparatus, Reynolds Guyer (to Waldorf Paper Products Co., Ramsey, Minn., a corporation of Minnesota). U.S. 2,888,963, June 2. A filling device for use in filling cartons, including a rotatable wheel and means supporting said wheel for rotation about a substantially horizontal axis, said wheel having a series of peripheral pockets.

Container-Filling and Weighing Machine, Frank L. Hopkins and Richard H. Ayres (to Bemis Bro. Bag Co., St. Louis, a corporation of Missouri). U.S. 2,889,031, June 2. Container-conveying and controlling apparatus for material dispensing and weighing devices, comprising material-delivery mechanism and a weighing scale, including a container-supporting platform mounted for limited vertical weighing movements.

Watch-Display Case, Francis E. Blod (to Farrington Mfg. Co., Needham Heights, a corporation of Massachusetts). U.S. 2,889,037, June 2. A case comprising a base shell, a cover pivotally connected to said base shell and an article-display platform hinged to said cover along a line parallel to the pivot axis of the cover.

Carton Package, John V. Fisher (to Container Corp. of America, Chicago, a corporation of Delaware). U.S. 2,889,040, June 2. A package comprising a group of upright cylindrical cans that are substantially in engagement with each other.

Container Carrying Handle, Edward O. Then (to American Can Co., New York, a corporation of New Jersey). U.S. 2,889,041, June 2. A substantially flat carrying device for a pair of rectangular fibre containers secured together in juxtaposed relation and each having laterally projecting peripheral ledges at their top ends.

Perfume Container, Martin T. Lawlor (to Scovill Mfg. Co., Waterbury, a corporation of Connecticut). U.S. 2,889,065, June 2. A covered container for liquids or the like, comprising in combination a bottle having a body with a plurality of exterior flat surfaces adjacent its bottom end and a projecting, reduced, exteriorly threaded neck.

Dispensing Container for Pressure-Propelled Products, Ralph Henry Thomas (to Colgate-Palmolive Co., Jersey City, a corporation of Delaware). U.S. 2,889,078, June 2. A dispensing container wherein a self-contained gaseous propellant is isolated during long storage and use from contact with the product to be dispensed.

Carton with Hinged Lid, Theodore C. Baker (to Container Corp. of America, Chicago, a corporation of Delaware). U.S. 2,889,100, June 2. A paperboard carton formed from a single composite blank comprising two co-extensive, substantially identical oblong blanks secured together face to face and respectively providing inner and outer plies.

Reclosable Pouring Opening for Containers, Frank D. Bergstein (to Bergstein Packaging Trust). U.S. 2,889,101, June 2. A container having an end closure comprising a single-thickness full-width closure flap perforated to provide a dispensing opening.

Cover-Locking Carton, Morris W. Kuchenbecker (to American Can Co., New York, a corporation of New Jersey). U.S. 2,889,103, June 2. A carton of flexible material comprising a tray having a bottom panel, upstanding front, rear and opposed side walls and a cover.

Machine for Covering Containers, Andrew W. Anderson (to Scandia Packaging Machinery Co., a corporation of New Jersey). U.S. 2,889,675, June 9. Container-covering means comprising means for feeding rimmed containers.

Cup-Carrying Package, Herman Carew (to American Can Co., New York, a corporation of New Jersey). U.S. 2,889,923, June 9. A sanitary package of paper cups especially adapted for mounting in a dispensing machine, including a substantial stack of nested paper cups of the flat-bottom, sloping-sidewall type.

Liquid-Metering Dispenser, Robert V. Burt (to The Procter & Gamble Co., Cincinnati, a corporation of Ohio). U.S. 2,889,966, June 9. A liquid-metering dispenser comprising an open-ended cylindrical body member having an integral transverse dividing wall.

Condiment Container, James G. Drennan (to Owens-Illinois Glass Co., Toledo, a corporation of Ohio). U.S. 2,889,967, June 9. A sifter-type fitment formed of resilient plastic material and comprising a relatively flat disk provided with a multiplicity of perforations therethrough.

Dispensing Carton, Kenneth T. Buttery (to Sutherland Paper Co., Kalamazoo, Mich.). U.S. 2,889,977, June 9. A dispensing carton formed of cut and scored cotton stock, comprising front, rear and side walls and a sealing flap.

Bag, Charles V. Brady (to Bemis Bro. Bag Co., St. Louis, a corporation of Missouri). U.S. 2,889,979, June 9. A paper valve bag having a folded and pasted closure at one end thereof, one of the corners of the bag at said end thereof being a valve corner.

Bag-Holding Device for Filling Machine, Frank L. Hopkins (to Bemis Bro. Bag Co.). U.S. 2,890,006, June 9. In a bag-filling machine, a downwardly directed chute adapted to have its lower discharge end portion received in a bag to be filled, said chute having downwardly converging side-wall portions.

Machine for Forming Plastic Containers, Leonard D. Soubier (to Owens-Illinois Glass Co., Toledo, a corporation of Ohio). U.S. 2,890,483, June 16. Apparatus for forming hollow articles of plastic material, said apparatus including an extruder having a bottom outlet opening.

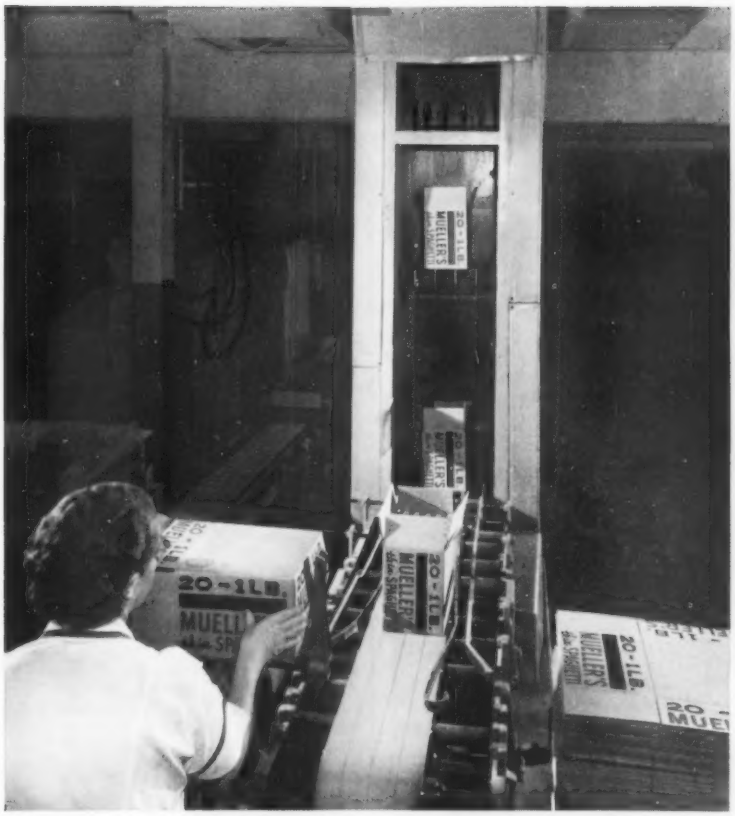
Method of Packaging, William Ernest Henderson (to Union Carbide Corp., New York, a corporation of New York). U.S. 2,890,552, June 16. A method of providing a protective skin-tight covering, which comprises inserting the item to be packaged in a bag formed of polyethylene film and suddenly subjecting the package to a temperature of more than 100 deg. C.

Case-Filling Machine, Carl L. Day and Wilmer D. Regnier (to Crown Cork & Seal Co., Baltimore, a corporation of New York). U.S. 2,890,553, June 16. In apparatus for placing articles in a case, a table including an upper horizontal surface and a reciprocable pusher movable across said surface.

Wrapping Machine Film-Material Supports, William A. Hayssen (to Hayssen Mfg. Co., Sheboygan, Wis., a corporation of Wisconsin). U.S. 2,890,555, June 16. A package-overwrapping machine having a package-wrapping station with an open side, adjacent which a sheet of soft and limp statically charged wrapping material is fed outstretched.

Paper-Box Machine, Edward A. Bailey, John B. Bradicich and Charles F. H. Crathern (to Food Machinery & Chemical Corp., San Jose, Calif., a corporation of Delaware). U.S. 2,890,630, June 16. A system for making set-up boxes, comprising means for feeding paperboard sheets in succession to an operating station.

Glass-Container-Inspecting Apparatus, Wallace W. Wolford (to Owens-Illinois Glass Co., Toledo, a corporation of Ohio). U.S. 2,890,786, June 16. In glass-container-inspecting apparatus, means



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Space-saving and jam-proof, the automatic upright operates a sixteen-hour shift, handling cartons at the prescribed rate of six-per-minute. Featuring unique infeed and discharge systems, the elevator cannot jam —ever. And, unlike bar and belt-type models, it doesn't mar or rub a carton's printed message. Through fixed positioning of trays, pendulum action is eliminated and cartons ride safe, secure, easy.

Robo-Lift Tray Elevators are available for a variety of lifting or *lowering* assignments. For full details on how Tray Elevators serve, request free literature, today.

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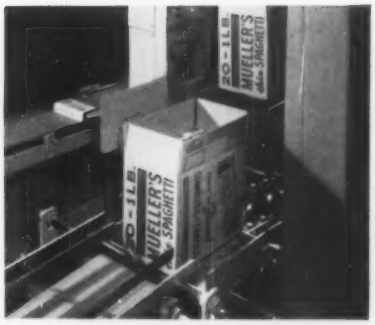
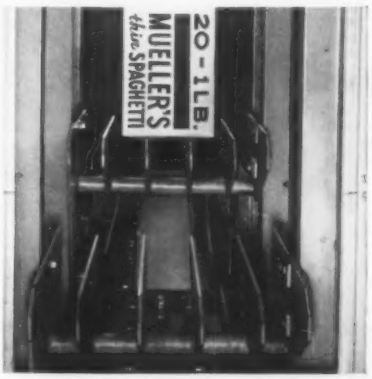
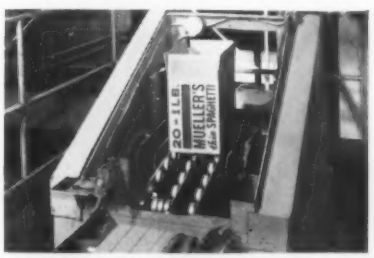


Close-up shows a filled carton beginning its gentle Tray Elevator ride upward. In the foreground, the next carton in line has moved off conveyor belt and is automatically held back until oncoming tray appears.



Moving straight up, the carton rests on a fixed, non-pendulum tray that neither swings nor sways . . . always holds carton steady, secure. Note how carton's open end bottom is held in a closed position until it reaches the sealing unit.



Just beneath the room's ceiling, the carton leaves the tray via rollers. Conveyor belt then takes over, moving carton through the sealing operation. Although a six-per-minute schedule is timed here, the elevator can move up to 15 cartons every minute.

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for rotatably supporting and bringing substantially cylindrical glass bottles or jars in recumbent positions and in succession to an inspecting station.

Sheet-Dispensing Carton, Frederick A. Wenzel (to Cornell Paperboard Products Co., Milwaukee, a corporation of Wisconsin). U.S. 2,890,791, June 16. A dispensing carton comprising a top having a dispensing slot and a slot closure hinged to the top at one side of the slot.

Valve Means for Pressurized Container, James A. Rheinstrom (to The Karl Kiefer Machine Co., Cincinnati, a corporation of Ohio). U.S. 2,890,817, June 16. In a pressure container including a cap for sealing said container, said cap incorporating a discharge valve for dispensing the contents.

Dispensing Carton for Rolled Material, Walter A. Becker (to Old Dominion Box Co., Charlotte, N.C., a corporation of North Carolina). U.S. 2,890,821, June 16. A dispensing carton for rolled pliable material having a hollow center, said carton comprising first and second side panels.

Dispensing Container for Rolls of Sheet-Wrapping Material, Richard J. Lee, Robert I. Kallman, Thomas M. Steinbach and Robert F. Stoming (to The Dow Chemical Co., Midland, Mich., a corporation of Delaware). U.S. 2,890,822, June 16. A dispensing container for packaging a wound supply roll of sheet-wrapping material, trough-forming elements in said container providing therein an open, V-shaped, outwardly funnelled trough.

Can-Arranging and Packaging Method and Apparatus, Charles T. Walter (to Continental Can Co., New York). U.S. 2,891,361, June 23. A method of arranging cans for packaging, which comprises arranging a package complement of cans in the form of a multiple of superposed layers, each layer composed of a plurality of rows of cans.

Hydraulic Container-Sealing Means, Harry E. Stover (to Anchor Hocking Glass Corp., Lancaster, O., a corporation of Delaware). U.S. 2,891,366, June 23. A sealing machine having a rotating turret with a plurality of sealing heads mounted thereon.

Box-Sealing Machine, Michael G. Shenigo (to West Virginia Pulp & Paper Co., New York, a corporation of Delaware). U.S. 2,891,367, June 23. A machine for packing large heavy objects in paperboard containers of rectangular shape and provided with four lower and four upper end flaps.

Method of Making Dispensing Containers Having Strong End Closures, Frank D. Bergstein, Alfred B. Kleingers, Jr., and Robert W. Nerenberg (to Bergstein Packaging Trust). U.S. 2,891,453, June 23. A method of sealing together all of the end-closure flaps at both ends of a container under positive sealing pressure applied throughout the entire contacting areas of the flaps being joined.

Method and Machine for Marking Bottle Closures, Arthur Sinclair Taylor and William Peter Konazewski (to American Cyanamid Co., New York, a corporation of Maine). U.S. 2,891,468, June

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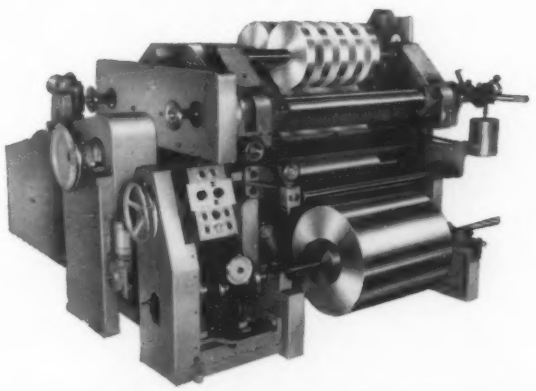

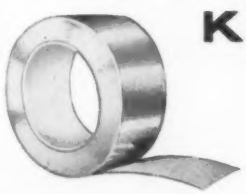

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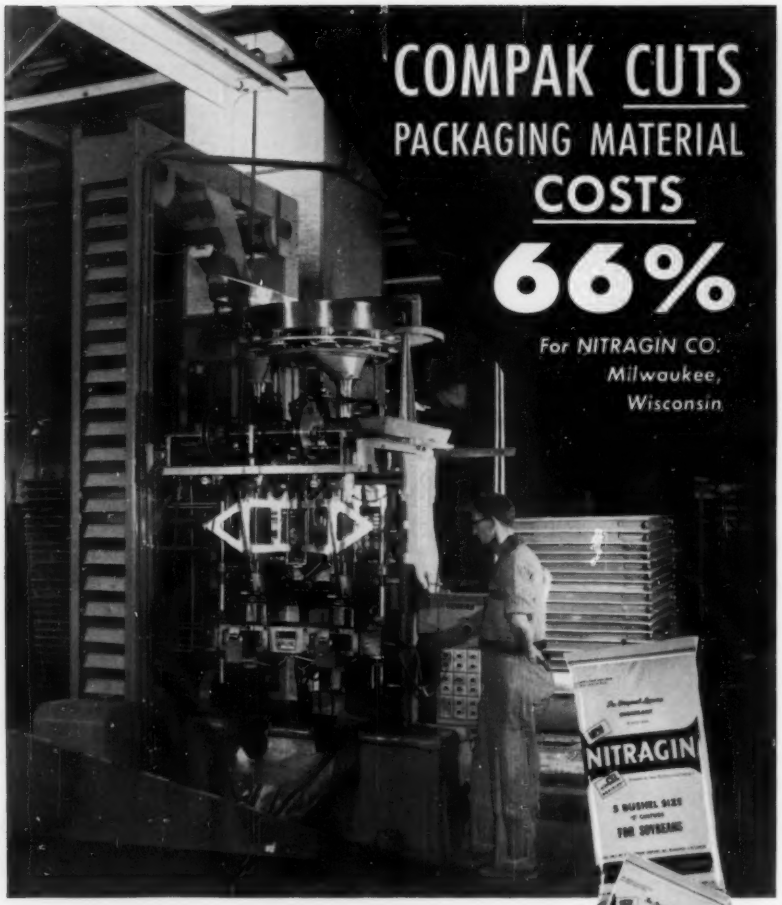

The Nitragin Company, Milwaukee, Wisconsin, world's largest producer of legume innoculants for agriculture, uses the above Hayssen Compak with elevator feed to form, fill and seal their new moisture-seal poly package. Packaging material costs alone have been reduced 66%.

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- **SPACE SAVED** — Full year's supply of roll poly stored in area formerly required for 3 month's supply of cans. *Twenty-five percent less storage area used* for poly-packed product than for equal amount of canned product.
- **LABOR REDUCED** — 43% less labor required to form, fill and seal packages on the Compak line than was used to produce an equal number of packages on the can filling line.
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- **GREATER CUSTOMER ACCEPTANCE** — Dealers, distributors like the new flexible package that gives them new handling and storage economies of their own.

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Patents [*Continued*]

23. A method of marking seal closures on glass bottles, which seals are slightly larger diametrically than the rims of the bottles.

Carrier Coupler for Containers, Adolph Weiss (to American Can Co., New York, a corporation of New Jersey). U.S. 2,891,665, June 23. A unitary carrying package comprising a pair of juxtaposed rectangular cartons having laterally projecting peripheral ledges.

Carrier Device for Containers, Edward O. Then (to American Can Co., New York). U.S. 2,891,666, June 23. A unitary package comprising a pair of independent rectangular fibre containers having surrounding peripheral, laterally projecting ledges.

Convertible Shipping Container and Method of Producing Same, Edward F. Repking (to Crown Zellerbach Corp., San Francisco, a corporation of Nevada). U.S. 2,891,710, June 23. A stepped display device convertible from a rectangular parallelepiped shipping container; the device comprising opposed upstanding L-shaped end walls each having a recess with horizontal and vertical margins.

Spirally Wound Container Tube, Charles L. Vallas (to The Cleveland Container Co., Cleveland, a corporation of Ohio). U.S. 2,891,714, June 23. A multi-ply, spirally wound tubular container having at least a semi-rigid wall construction and having rigid closure caps at each end of the container.

Valve Bag with Pasted End Closure, Harry E. Lee (to St. Regis Paper Co., New York, a corporation of New York). U.S. 2,891,716, June 23. A valve bag of the type having an end closure formed of corner flaps and adhered overlying side flaps, with one of the inturned underlying corner flaps forming a valve lip.

Winding Mandrel for Packaging Glass Strands, Roy E. Smith (to Owens-Corning Fiberglas Corp., a corporation of Delaware). U.S. 2,891,798, June 23. A rotatable mandrel for holding an expandable, resilient tube upon which a glass strand or the like is wound.

Machine for Inserting Pouring Spouts into Containers, Milton H. Klausmann (to Seal-Spout Corp., Newark, a corporation of New Jersey). U.S. 2,892,430, June 30. A machine for mounting a pouring spout in a wall of a container having an open end.

Bag, Russell J. Williams (to Bemis Bro. Bag Co., St. Louis, a corporation of Missouri). U.S. 2,892,580, June 30. A multi-ply paper bag having at least three plies.

Carrying Device for Juxtaposed Containers, John Felber (to American Can Co., New York, a corporation of New Jersey). U.S. 2,892,654, June 30. A carrying device for tying together a group of juxtaposed rectangular containers as a unitary package.

Method and Apparatus for Treating Synthetic-Resin Containers, Edward B. Gardner and Alvin R. Nielsen (to Plax Corp., Bloomfield, Conn., a corporation of Delaware). U.S. 2,892,733, June 30. A method of treating the interior walls of synthetic-resin containers to render them receptive to the application of a polar film coating.

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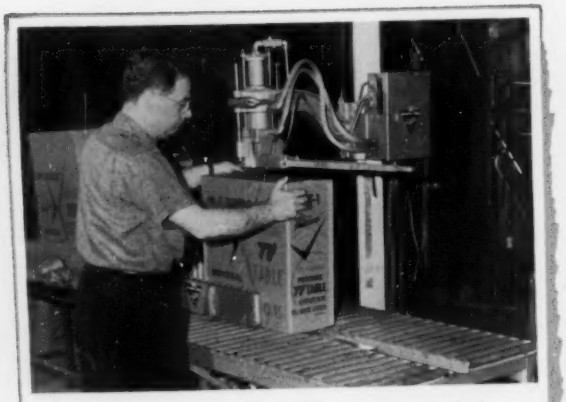
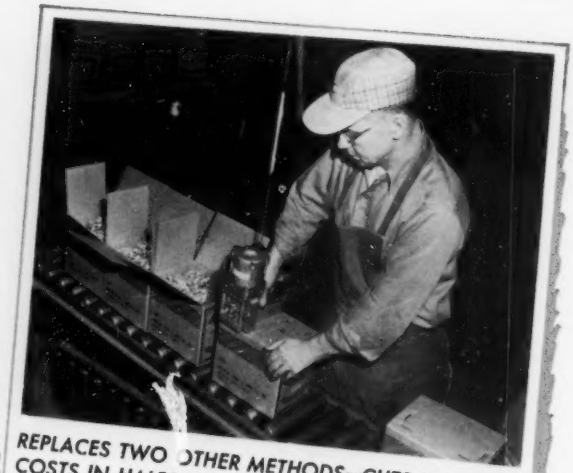


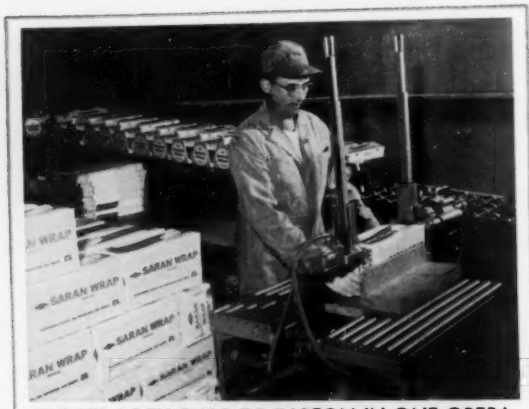
REDUCES LABOR COSTS 50%! Four other methods were previously used to close filled cartons for this manufacturer's automotive and television accessories. Two people averaged 1100 cartons per 8-hour day. International Dual Stapler installation which simultaneously staples top and bottom flaps of filled cartons has upped production to 1500 (400 more cartons per day) — with just **one** operator.



REPLACES TWO OTHER METHODS—CUTS MATERIAL COSTS IN HALF! In a newly streamlined packaging program, this chain manufacturer has replaced glued-up corrugated cartons and wire-bound boxes with stapling, using an air-operated portable International "Air Boxer". Results: Substantial material savings and labor costs cut in half.

Case Histories Prove

INTERNATIONAL STAPLING METHOD CUTS CARTON CLOSING COSTS BY 50% *AND MORE!*



CLOSES BOTH ENDS OF CARTON IN ONE OPERATION—INCREASES PRODUCTION! This manufacturer turned to the versatility of the International Twin End Stapler for closing tops and bottoms of their center-slot shipping cartons. International Twin-End Staplers are primarily used to close both ends of partial overlap, full overlap or telescope cartons, but can also handle center slot cartons. Adaptable to a carton size range from 6" to 28".

NO OTHER METHOD OF CARTON CLOSING offers you such large savings in so many ways — in material, productivity, storage, safety, reusability and labor. These savings are possible because the International method of stapling is **fast** (up to 500 cartons per hour — according to your needs); **efficient** (cartons are filled before stapling); **neat and safe** (a better-looking carton that's pilferproof and reusable.)

ASK YOUR INTERNATIONAL REPRESENTATIVE for details on other dollar, time and labor-saving advantages . . . and for information on International units best suited to your operation.

Write for "The Modern Low Cost Way to Close Cartons."

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Speed King's split-second set and amazing dry (as little as 2 hours) mean faster processing of the printed board—with obvious advantages to the carton printer.

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These wonderful new inks—both letterpress and offset—are now available from your nearest IPI branch, in a wide range of popular carton colors.

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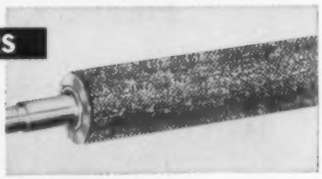

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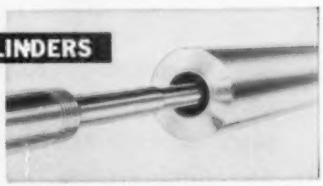

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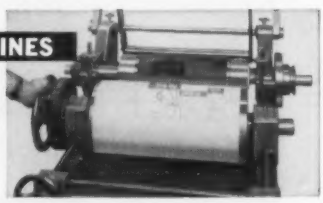

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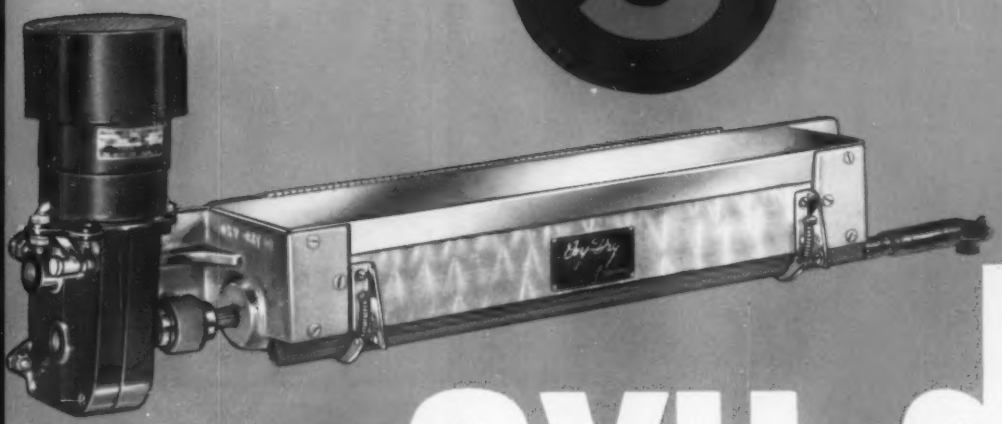
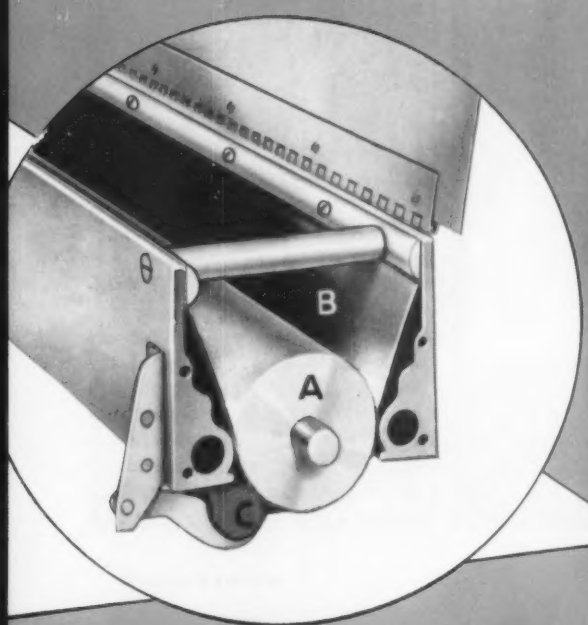


oxy-dry

INK OFFSET PREVENTION SPRAYERS



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Gone: a familiar face

The face of De Witt Clinton, which has appeared on more packages than that of any other individual in history, will be seen no more. As of June 24, cigarette manufacturers have been relieved of the necessity of buying and applying the familiar blue excise tax stamp which has greeted smokers on 20-packs no less than 500 billion times. Instead, the tobacco companies will make semi-monthly tax returns.

New Lorillard stamp replaces Clinton.

The Government saves the cost of printing 22 billion stamps per year and the companies no longer need lay out money for them in advance of the actual tax liability.

Sudden elimination of a package element as familiar as this one posed interesting questions. On the standard "cup" package for 20 cigarettes, the blue stamp has provided the means of holding the top of the package together and some such closure must still be used with present soft-pack machinery. There was also the feeling among some manufacturers that a cigarette package without a blue stamp would not look

Other companies' substitute stamps.

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cuts and stacks cellophane, foil, kraft, glassine, waxed and gift-wrap papers

At cost-cutting high speeds, Peters Model UD Sheeting and Stacking Machine cuts paper to exact size and stacks sheets to predetermined quantities for easy pick up or packaging. Completely automatic operation cuts rolls into sheets. Quick, easy change from one sheet size to another—from 4" x 4" up to 28" x 28", square or rectangular. Electric eye attachment available for printed sheets. Slitting attachment also available.

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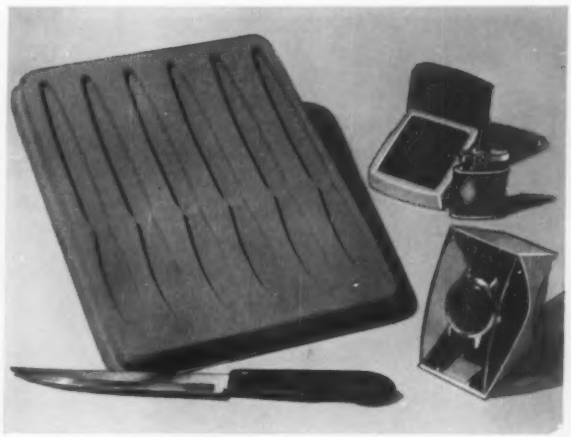

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Nashua STYLOUR brings to package designers, box makers, and vacuum formers a versatile new material for low cost luxury packaging! This high impact polystyrene — richly flocked by Nashua-perfected process — is adaptable to a wide variety of packaging requirements, from platforms to die-cut parts. It is particularly suitable for vacuum and pressure forming . . . takes deep-draw work with no perceptible thinning of flock. In many applications, the velvet-like beauty of STYLOUR can be used to advantage in place of fabrics and other costly materials.

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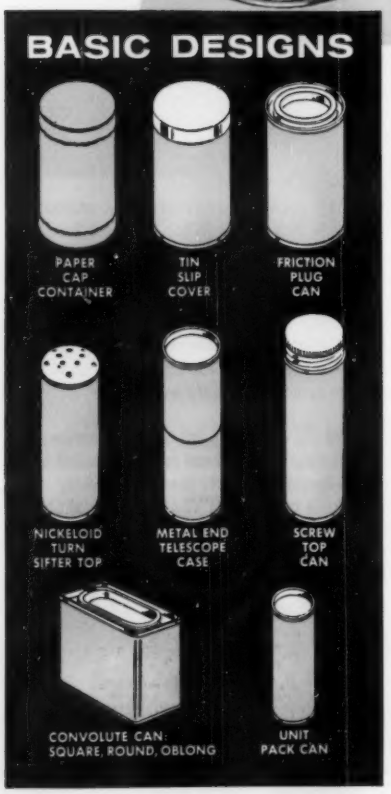
CLEVELAND CONTAINERS

New and Conventional!



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is available in every kind, type and size in chipboard, jute, kraft, fish paper, etc., . . . light or heavy wall . . . in diameters up to 24". Special tubing also available for electrical uses.

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Abrasive Division at Cleveland

genuine. Therefore, all companies are continuing to use a stamp of the same blue paper, but with a design of their own choosing.

Many smokers probably are unaware of any change. In the accompanying photographs, the old De Witt Clinton tax stamp is shown in comparison with the new design adopted by P. Lorillard Co. for its Kents and other brands. New stamps for three other cigarette companies also are shown.

The law still requires that each package show the revenue class ("A" or "B") and the number of cigarettes contained. All brands so far out with dummy stamps have this information still on the stamp. But if stamps later are dispensed with, the data can appear with other mandatory copy on the package itself. On some brands in hard boxes, where the stamps never served a functional purpose, it has already disappeared. And cigarette-packaging machinery makers are now working on new closure methods for soft packs which may eventually eliminate the blue strip there, too—if and when the tobacco companies decide that the public is ready for this step.

The Tobacco Institute estimates that 500 billion De Witt Clinton cigarette stamps have raised more than $29 billion for the Government since 1875. Use of tax stamps on tobacco products started in 1864. The face of Thomas Jefferson appeared on cigarette stamps until 1875, when Clinton was substituted on the occasion of the 50th anniversary of the opening of the Erie Canal.

But most of the 65,000,000 Americans who have been carrying his picture in their pockets daily for years apparently paid little attention to this most-printed package illustration. In interviews with 60 people in Washington, D. C., the Tobacco Institute found only nine who recognized Clinton's picture and only six of these were smokers.

Effective also July 1, distillers have been relieved of the burden of paying for their revenue strip stamps in advance. They will simply make an accounting with the Government twice a month. But the use of the tax stamp on liquor bottles is still a requirement.

Tax stamps were removed from most cigar packages some months ago. ●

It can't be just "adequate"...

PACKAGE MARKING

either makes money or wastes it

Readable, attractive marking made by Markem machines on your boxes or labels helps them from the moment they're marked to the time they're used — and can even help future sales as well. Good marking speeds handling . . . reduces waste and packing errors . . . allows quick selection by customers . . . simplifies and encourages reordering . . . carries the "quality" message of modern package design.

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And a Markem marking method makes important "in-plant" savings as well. The right Markem machine, type and specialty ink working in your plant marks the *right* quantities at the right time — with savings in inventory, labor and delivery time . . . eliminates waste from obsolescence . . . handles "short runs" rapidly and economically . . . provides flexibility that allows *one machine to do a variety of marking jobs.*

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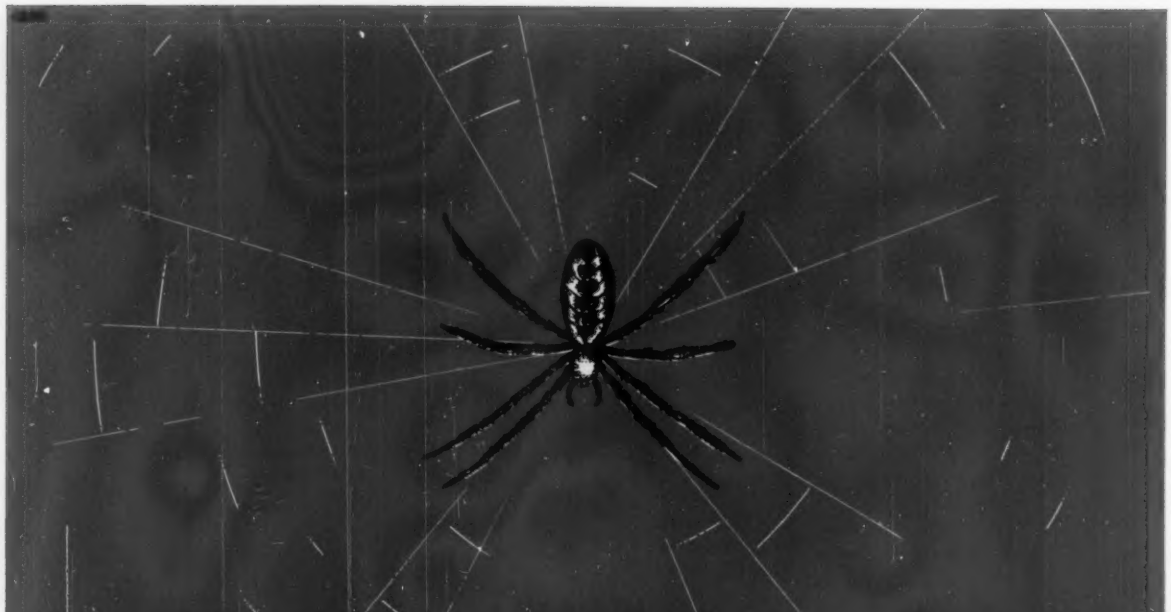

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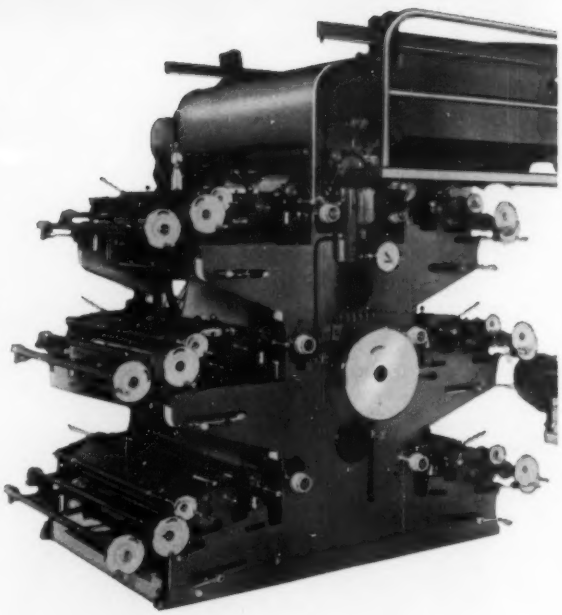

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PLASTIC DROP-APPLICATORS. Two 4-page brochures describe a line of plastic droppers, plain and graduated, straight and curved, and a line of plastic dropper caps. Colonial Applicator Co. **(I-950)**

OVERLOAD RELEASE CLUTCHES. Illustrated 8-page brochure gives technical data on a line of overload release clutches which act without time lag. Mechanical drawings, exploded view. Centric Clutch Co. **(I-951)**

METAL-EDGED CONTAINERS. Illustrated brochures describe a line of kraft fibre containers with metal reinforced corners and discuss their advantages and applications. Metal Edge Industries. **(I-952)**

BOX MACHINE. Illustrated 8-page brochure gives technical data on a machine that makes a wide range of styles and sizes of cartons, plus pads and liners, from corrugated sheets. Slits, slots, scores and cuts off automatically. Complete dimensional change in about 1½ min. Colt Packaging Machinery Co. **(I-953)**

COLORIMETER. Illustrated 4-page brochure describes a Colorimeter with an abridged spectrophometer which handles all kinds of materials, solid and liquid, and indicates color differences in easily interpreted numerical values. Instrument Development Laboratories. **(I-954)**

HEAVY DUTY CHECKWEIGHER. Illustrated 4-page brochure describes a new checkweigher which handles bags, boxes, packages, slabs, blocks, etc., while in motion. Range 50 to 200 lbs. Zone widths 2 to 8 oz., with zone edge accuracy of plus or minus ⅓ oz. Up to 40 weighings per min. Toledo Scale Corp. **(I-955)**

FILLING & LABELING EQUIPMENT. Illustrated 16-page brochure describes a line of filling, labeling, filling-labeling, corking, air cleaning and bottle feeding machines for handling a wide variety of liquid containers in the food, drug, and cosmetic fields, and others. Biner-Ellison Machinery Co. **(I-956)**

MOLDED BEARINGS. Illustrated 4-page brochure describes the long-wear and low-friction characteristics of a vulcanized fibre and a thermosetting plastic as used in making small parts for wear applications. Spaulding Fibre Co. **(I-957)**

INDEXING UNITS. 26-page bulletin on 3 models of a cam-operated indexing unit. Gives drawings, tables of indexing positions and cams, results of accuracy tests, dimensions of standard tooling and die plates and tables of load rating. Standard Tool & Mfg. Co. **(I-958)**

EDGE-CODING MACHINES. Illustrated sheet describes a system of edge-coding labels with notches. Pictures the two models of the notching machine, one of which codes 2,000 labels per min. and the other 4,000. Griffin-Rutgers, Inc. **(I-959)**

GUMMED TAPE SEALER. Illustrated 4-page brochure describes an electrically operated machine which delivers a desired length of gummed tape, properly moistened, at a button touch. Handles 1½ to 3 in. widths. Choice of 6 to 36 in. or 15 to 45 in. measuring scales. Better Packages, Inc. **(I-960)**

VIALS AND TUBES. Illustrated 8-page folder describes a line of resilient, shatterproof, transparent plastic vials and tubes for solids and liquids including edibles. Liquid capacities from ¼ to 3 fl. ozs. Lusteroid Container Co. **(I-961)**

WEIGHING AND BAGGING MACHINE. Illustrated technical sheet describes a machine which weighs coffee, dried vegetables, rice, grains, sugar, etc., range 3 ozs. to 5 lbs. Up to 16 weighings per min. Accuracy to one part in 1,000. Rene Boas & Associates. **(I-962)**

POWDER FILLING MACHINES. Illustrated 12-page brochure describes and gives specifications for two single-head, a two-head and two rotary filling machines, a drum filler and a bag filler, all operating on the vacuum principle. Pneumatic Scale Corp. **(I-963)**

ROUND CONTAINER LABELING. Illustrated 8-page technical service bulletin describes available wrap-around labeling equipment and the Paisley line of labeling adhesives. Paisley Products, Inc. **(I-964)**

AUTOMATIC BATCH WEIGHER. Illustrated data sheet describes a scale which weighs and dispenses liquids automatically in batches of one or many. Reproducibility of plus or minus 1% or 0.5 gram, whichever is larger. Capacity 210 grams (2,000 grams optional). Delsen Corp. **(I-965)**

CASE PACKER FOR BOTTLES. Illustrated 4-page brochure describes a bottom-loading case packer for bottled goods. Capacity up to 20 cases of 24 bottles each per min. Mechanical drawings. W. F. & John Barnes Co. **(I-966)**

POLYSTYRENE FOOD PACKAGES. Illustrated 6-page folder describes types of food containers available in clear polystyrene. Also describes polystyrene film available in gauges of .001, .0015, and .002 inches. Plax Corp. **(I-967)**

BAG STITCHER. Illustrated 4-page brochure describes four models of a sewing machine for multiwall paper bags. Gives characteristics of the eight different stitches possible. International Paper Co. **(I-968)**

SALES APPEAL IN PACKAGING. Illustrated 12-page booklet is a guide to evaluating product, label and package for shelf-appeal to women in supermarkets. Includes information on new product development and proper procedures in soliciting publicity. Offers consultation service. American Can Co. **(I-969)**

CASE PACKERS AND SEALERS. 4 Illustrated data sheets give specifications for, and describe the operations of a case packer and a semi-automatic bottom case sealer, and an automatic top and bottom case sealer. A-B-C Packaging Machinery Corp. **(I-970)**

CUTTER-PILER UNIT. Illustrated 6-page brochure describes four different models of a cutter-piler unit: for general purpose use, single or multiple sheeting, sheeting pre-printed stock from rolls, and sheeting printed stock direct from the presses. Clark-Aiken Co. **(I-971)**

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PRESSURE-SENSITIVE TAPES. Illustrated 24-page booklet discusses the role of pressure-sensitive tapes in the food industry. Describes dispensers and gives thickness, tensile strength, stretch and adhesion ratings for 23 types of tape. Minnesota Mining and Manufacturing Co. **(I-973)**

SHOCK AND VIBRATION ISOLATORS. Illustrated 4-page brochure describes a line of shock isolators and provides graphs and figures with which it can be determined what load-rating should be selected for given applications. Barry Controls. **(I-974)**

ELECTRIC TACHOMETERS. Illustrated 4-page brochure describes a line of electrically actuated tachometers in a variety of ranges and types. Mechanical drawings of various couplings and mounts. Electro-Mechano Co. **(I-975)**

DOCKING TRUCK. Illustrated 8-page brochure discusses the place of the stand-up, end-control truck in material handling systems. High stacking, congested-area operation and truck and car loading are among the phases considered. Automatic Transportation Co. **(I-976)**

POWER PAPER CUTTER. Illustrated 4-page brochure describes a power cutter with a maximum cutting width of 37 in., which will cut a pile of paper up to 4¾ in. thick. Challenge Machinery Co. **(I-977)**

VULCANIZED FIBRE CONTAINERS. Illustrated 6-page brochure describes a line of vulcanized fibre trays, boxes, trucks, etc., and discusses their advantages in six case histories. Custom designed to requirements. National Vulcanized Fibre Co. **(I-978)**

BAGGING MACHINES. Illustrated data sheet describes five models of a bagging machine for bakery products, handling polyethylene, cellophane, paper, glassine or mylar bags, lip of flush cut. Air jets open bags automatically. Tele-Sonic Packaging Corp. **(I-979)**

AEROSOL VALVES. Data sheets give specifications for three types of aerosol valves. One is used in standard one-inch opening containers, another is a metered valve for glass bottles and the third is for glass bottles. Valve Corp. of America. **(I-980)**

SKIN-PACKAGING MACHINERY. Illustrated 4-page folder describes a skin-packaging machine available in four sizes and a right-angle slitter which cuts in two directions. Also price list, which includes coating, drying and scoring equipment, and blowers, ducts and dampers. Abbott Eastern Plastic Machinery Sales. **(I-981)**

MARKING MACHINES. Data sheet describes a tape core marking machine which imprints the inside walls of cardboard cores, I.D. 1 to 3 inches. Van Buskirk & Co. **(I-982)**

CORRUGATED CARTONS. Illustrated 6-page brochure describes a 14-man department of packaging specialists and the procedure they follow in analyzing, designing and constructing corrugated shipping containers to requirements. Hoerner Boxes, Inc. **(I-983)**

PLASTIC BOXES. Illustrated 6-page folder shows sizes and shapes of an extensive line of plastic boxes from stock molds. Transparent, opaque, two-tone. Price list included. Oppenheim Co. **(I-984)**

CORNER STAY MACHINE. Sheet describes and pictures a machine which makes metal corner reinforcements for fibre boxes. One model produces a ⅝ in. width stay, another a 1 in. width. Cincinnati Box & Partition Co. **(I-985)**

PACKAGING SERVICE. Illustrated 12-page booklet describes a service which includes the planning and design of unit packages, receiving the manufacturer's product in bulk, unit-packaging it, inserting literature, weighing, labeling, cartoning and shipping. Ivers-Lee Co. **(I-986)**

FIBRE DRUMS. 4-page bulletin gives specifications for fibre drums, available from various manufacturers, for dry products, semi-liquids, liquids and semi-solids. Capacities up to 550 lbs. and 75 gallons. Fibre Drum Manufacturers Ass'n. **(I-987)**

CUSTOM-DESIGNED CUSHIONING PACKS. Illustrated 4-page brochure describes a cushioning packing material, formed of latex-impregnated coiled hair, which can be molded to an exact, snug fit of any article. Also in sheets, rolls and die-cut. Blocksom & Co. **(I-988)**

PACKAGE OPENING TAPE. 8-page booklet gives tips to production personnel on the handling and storage of "Zip-Tape," this company's cellophane package-opening tape. The Dobeckmun Co. **(I-989)**

LIQUID FILLING MACHINES. Illustrated brochure describes this company's lines of vacuum and gravity liquid filling machines, including foamy liquid fillers. Units are straight line, automatic and semi-automatic. Packer Machinery Corp. **(I-990)**

CORRUGATED BOXES. 30-page brochure illustrates, gives features and uses for this company's corrugated boxes. Discusses factors involved in selection, including original packing, intermediate handling, storage, methods of stacking and loading, etc. Hinde & Dauch. **(I-991)**

GLASSINE AND GREASEPROOF PAPERS. Sample book shows white, opaque and colored protective papers for baked goods, candies, delicatessen, meats, etc. Papers also protect against rust and corrosion. Hammersley Mfg. Co. **(I-992)**

POWERED TWISTER. Illustrated technical data sheet describes a powered twister for round containers. Unit, of stainless steel, handles between 60 and 180 bottles per minute. Island Equipment Corp. **(I-993)**

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Triple French event

Three events will highlight this year's French Packaging Show, to be held Oct. 16-25 at the Palace of the National Industrial & Technical Center, Paris: The 13th Packaging and Point-of-Sale Advertising Show, the 8th International Material-Handling Show and the 10th International Office Equipment Show. Theme of the show is "The Common Market," indicating not only European industrial cooperation, but a firm resolution to "push onward" so far as industry is concerned.

Attendance is expected to reach 150,000, exceeding last year's figure of 120,000. By grouping together three shows of interest to the same type of industrial specialists, the organizers of the show believe that they are rendering a new service that will be especially appreciated by foreign visitors, who can now cover three important events in one trip.

Technical aspects of packaging, shipping and storage will be covered during the concurrent Ninth French Packaging Congress, to be held on Oct. 19 and 20. Carrying out the "Common Market" theme, panel discussions this year will cover four specific fields: packaging and self service, visual research on package design, corrosion and its prevention, and material handling as it is concerned with packaging. ●

Cohesive sealing

[*Continued from page 142*]

the spacer bars. It passes under a metal printing roller to be stamped with part identification. Then it moves downward through an adjustable forming unit to meet the bottom web of paper.

After the webs come together, they are directed toward two pairs of rubber-edged rollers which pull both webs toward the shear while joining their side edges with gentle pressure. The rollers are adjustable to different widths of paper. At the cut-off station, an automatically timed knife severs the tube into equal-sized packages. As the knife edges meet, a pair of spring-action shoulders on either side automatically seal the back margin of the delivered package and the front margin of the succeeding one.

Chrysler stocks 3-, 4-, 5- and 6-in.-

[*Continued on page 212*]

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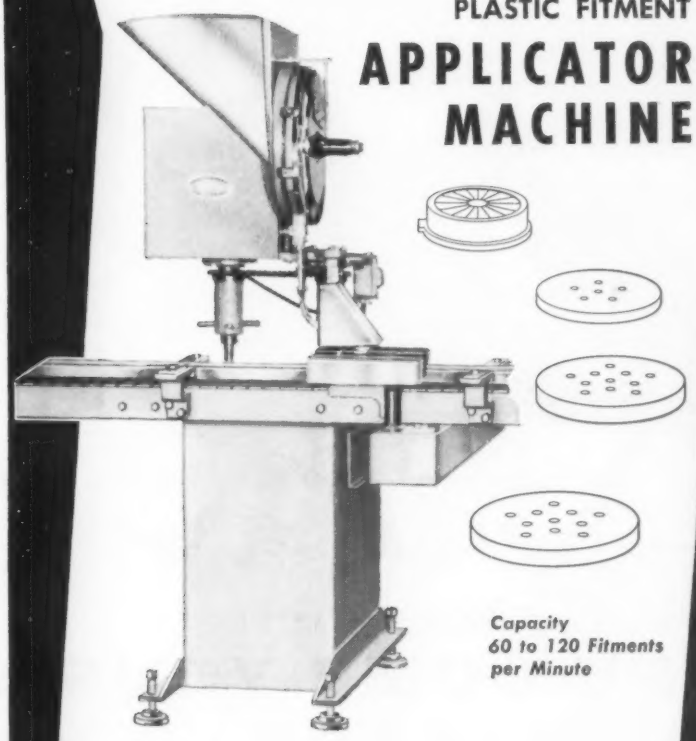

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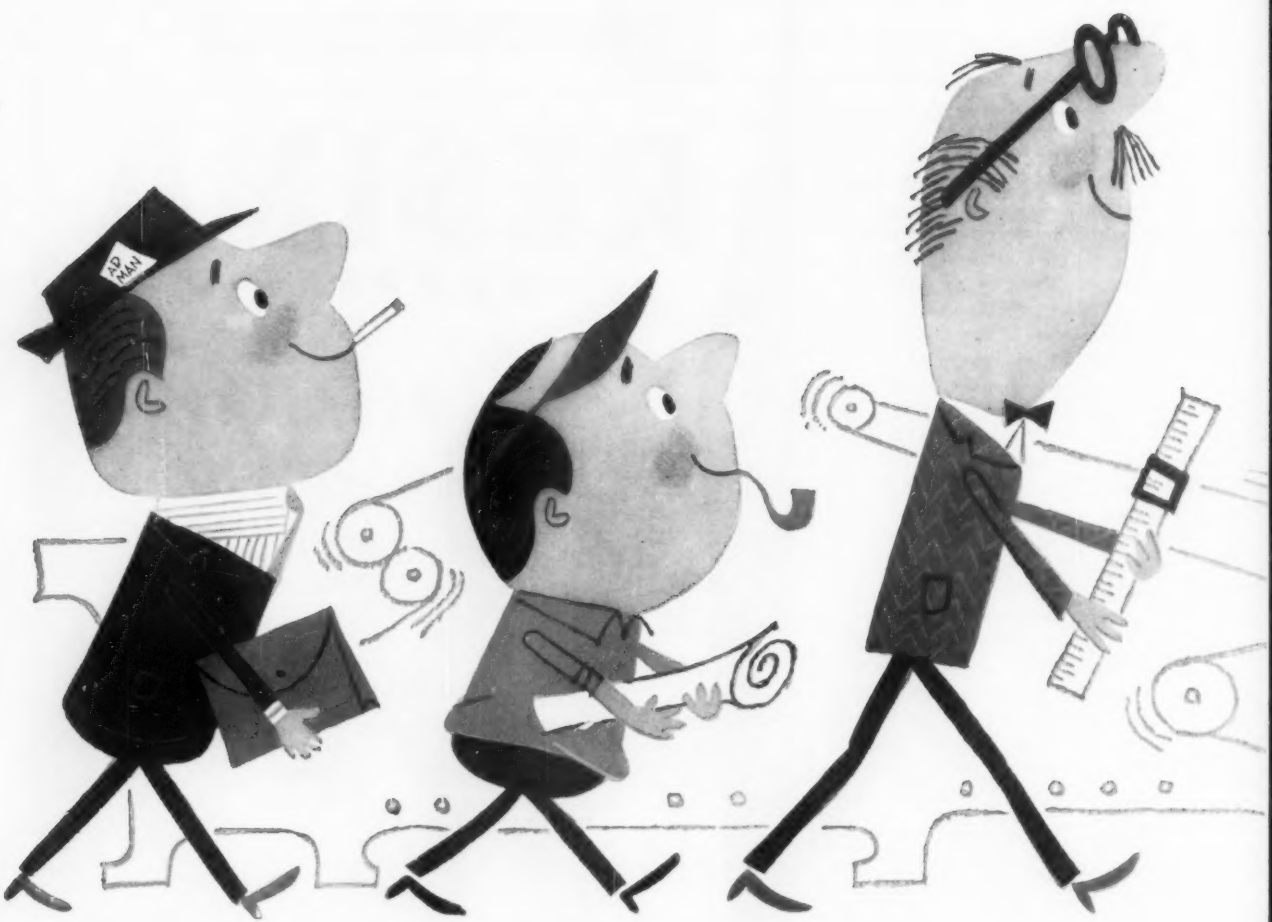

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[*Continued from page 209*]
wide rolls of paper for use with this machine. Change-over time varies from 2 to 3 min. for a change in package length to 10 min. for installing two complete new webs of the paper material.

Machine 'B'

Machine "B" has a top and bottom web set-up much like that of Machine "A." Movement of both webs is controlled by a pair of large sponge-rubber sealing rollers, which span the width of the machine. This machine has no spacer bars. Parts can be placed on the bottom web at random as long as they are within the confines of the paper's width (3 to 12 in.).

As top and bottom webs meet, with the part centered between, they pass through the sealing rollers and all four sides of the package are sealed simultaneously by pressure. The package then passes under a rider bar, which drops as the end of the part passes beneath it. A solenoid is tripped, activating the cut-off knife. No pre-setting of the machine is necessary, except for web speed. The machine automatically compensates for different lengths of parts. A variable-speed drive permits speeds up ot 80 ft. per minute.

Machine "B" was originally installed for packaging only sturdy parts of metal or plastic. It was feared that fragile parts might be damaged in the sealing rollers or when the cohesive-paper packages were opened by customers. But the addition of a corrugated filler folded around the part inside the cohesive paper solved this problem nicely. Packaging speed for these delicate parts, even with the hand-loaded filler, is many times faster than the former all-manual operation. Less than half as many operators are required and packaging-material costs are no higher.

Chrysler has found product corrosion no problem in cohesive-paper packages, even though some metal parts may remain in storage for a year or more. The latex coating in itself provides an airtight seal. However, the machine suppliers are experimenting with a dusting mechanism using VCI (volatile-corrosion inhibitor) powder for attachment to the machine where rust might be a threat to the product. ●

F&DA clearances lag

With only six months left until the March 6, 1960, deadline specified in the new Food Additives Amendment to the Food, Drug and Cosmetics Act, F&DA has "filed" only nine petitions for clearance of direct food additives and two for packaging materials, according to Arthur S. Flemming, Secretary of Health, Education & Welfare.

While several hundred additives are expected to be designed by experts as safe without testing, there are at least 700 more chemicals now used in foods that will need formal F&DA clearances, says Secretary Flemming.

No estimate has been made, however, of the number of packaging materials and component compounds that must also be probed.

To speed clearances of direct additives and natural seasonings, F&DA is now distributing lists of the questionable chemicals to 800 "qualified experts" who will give their opinions on whether these compounds are safe. However, no such program has been announced for packaging materials. ●

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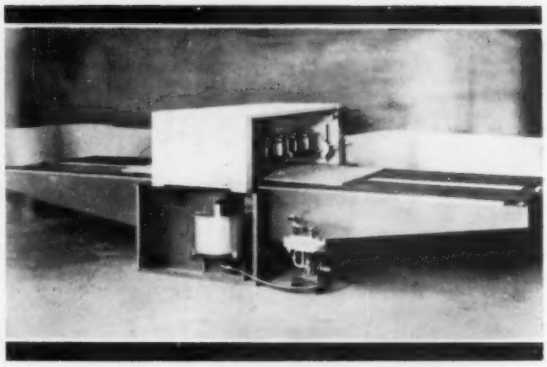

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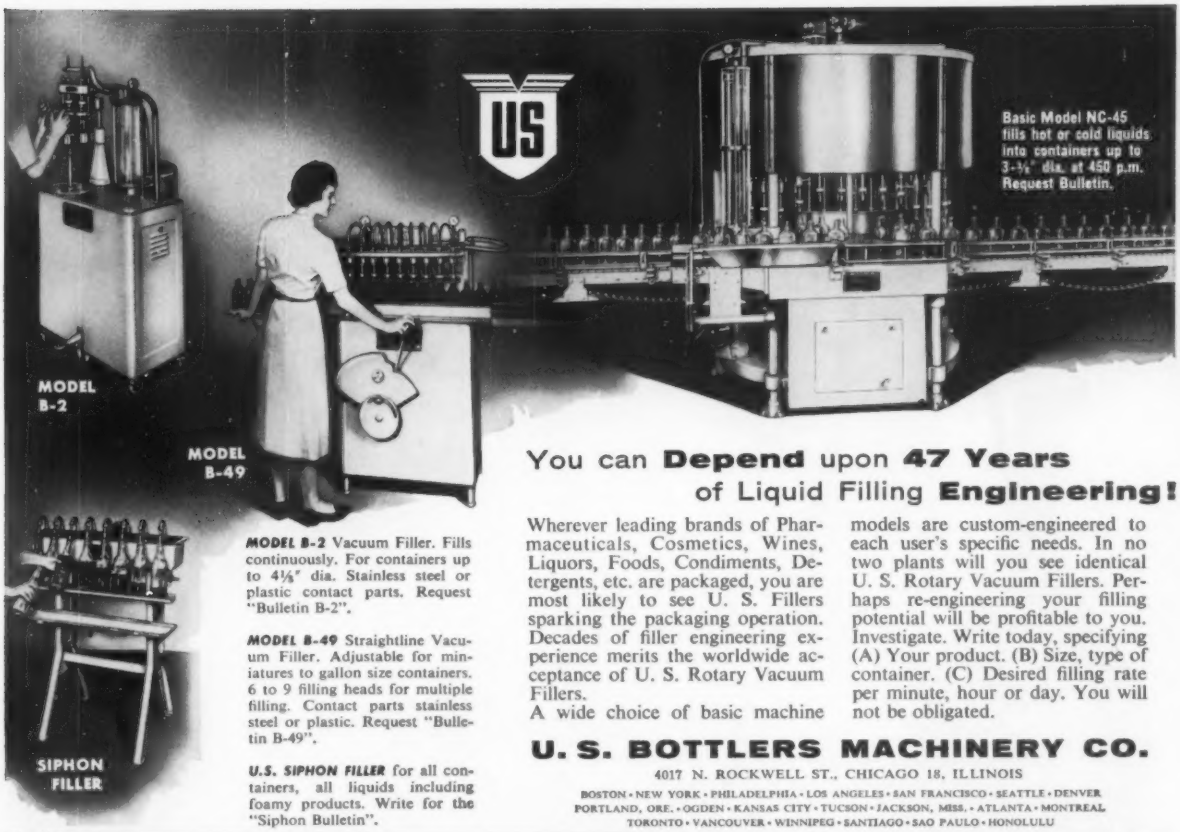
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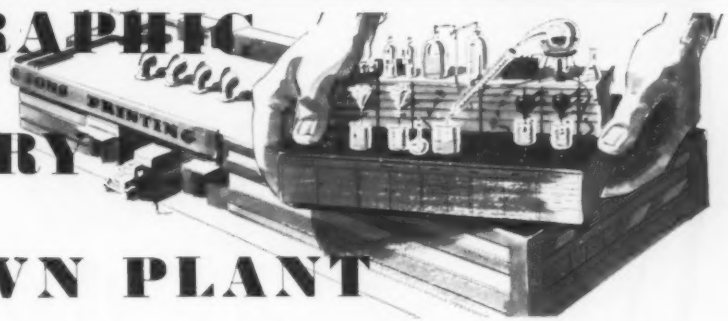

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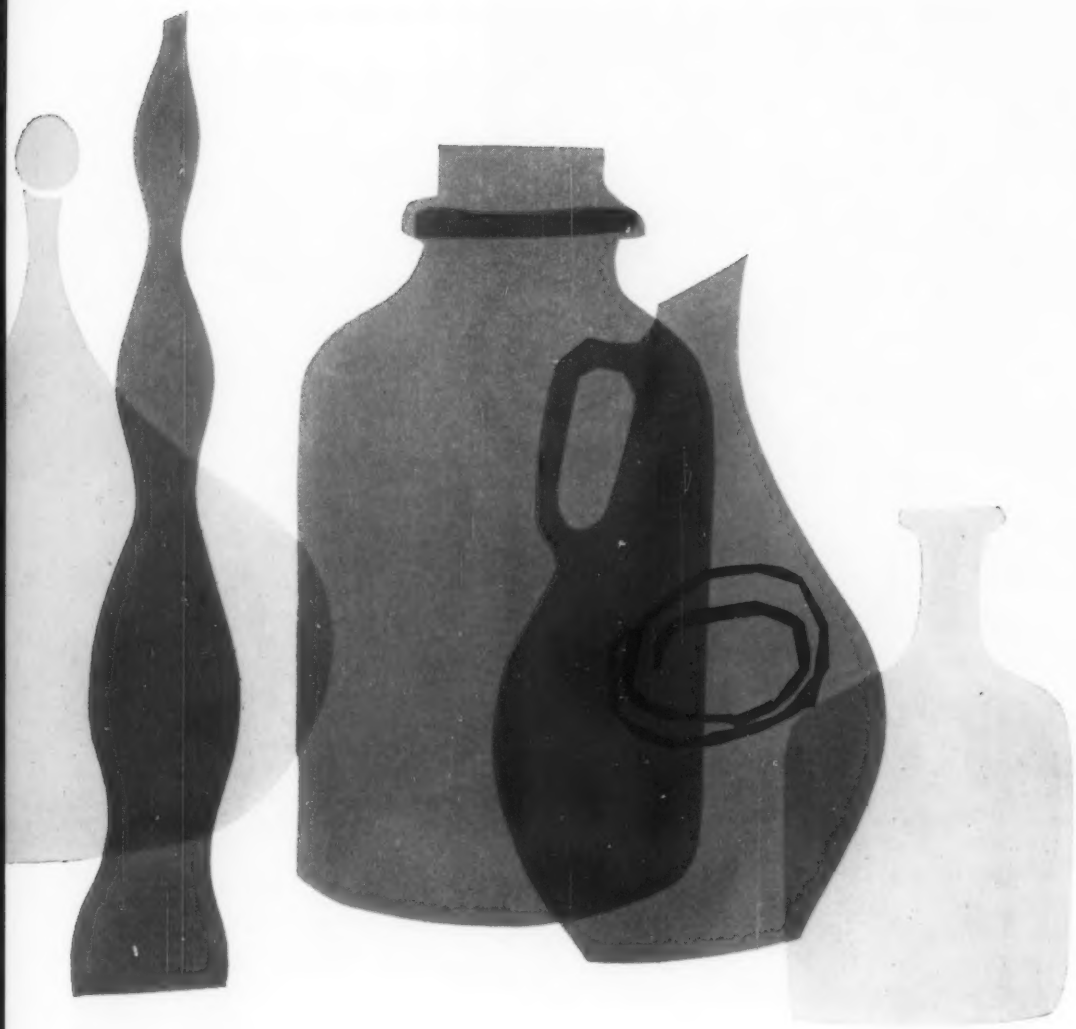

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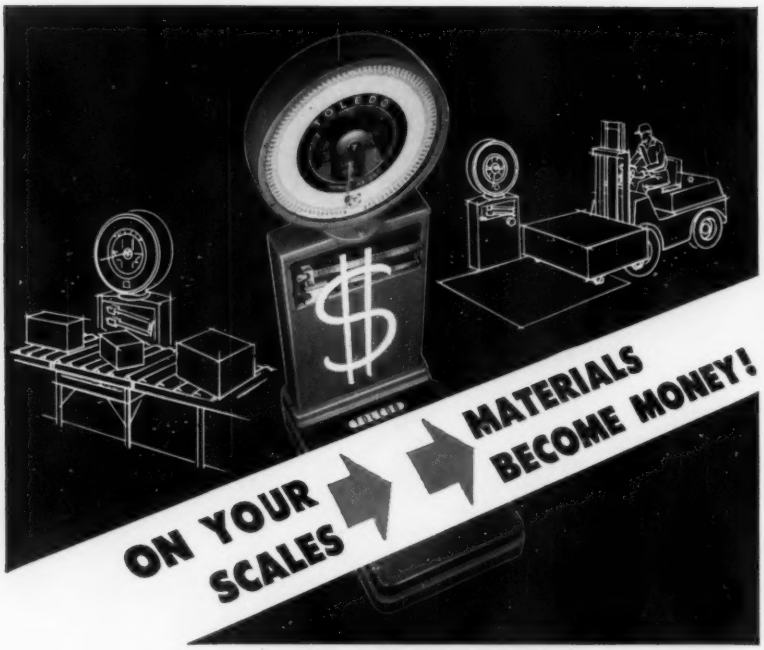

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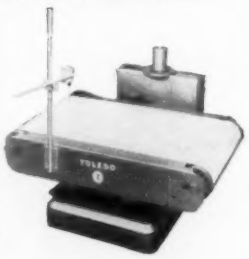

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PMMI Show

Two full floors of the New York Coliseum will display the newest developments in products and services by 155 different manufacturers of packaging machinery from Nov. 17 through 20—the four days of the Packaging Machinery Manufacturers Institute Show. The Packaging Institute's annual National Packaging Forum will run concurrently (see below).

This year's PMMI Show is expected to be the largest ever, with floor space in excess of 63,000 sq. ft. devoted to machinery and related materials. All exhibit space has been contracted for and there is a "waiting list" of potential exhibitors who hope that there may be cancellations which would allow them to create displays for their equipment.

A registration fee of $2 will be charged all visitors to the PMMI Show, following the successful policy recently adopted for attendance at the AMA Packaging Show.

Pre-registration cards are available which will eliminate the necessity of visitors waiting in long registration lines. Show badges and address plates are made up in advance, ready for pick-up on the first visit to the show. For pre-registration cards, write to PMMI Management, Hanson & Shea, Inc., 1 Gateway Center, Pittsburgh 22. ●

PI Forum

Concurrent with the Packaging Machinery Show (see above), the Packaging Institute's 21st annual National Packaging Forum will be staged Nov. 16 through 18 at the Statler-Hilton Hotel, New York.

Three concurrent seminars are scheduled on each of the three days of the Forum, with morning and afternoon sessions planned for Tuesday, the second day.

A PI business meeting and election of officers Monday morning will start the program. At 11 a.m. there will be a presentation on the do's and don'ts of supermarket merchandising and warehousing, followed by a luncheon at which a guest speaker will address the group.

Monday afternoon seminars will cover package marketing, research and development, and the safety of packaging materials, the latter centering attention on the Food Addi-

[*Continued on page 220*]

4 reasons why "Mylar" is the ideal window material . . .

1. Will not warp, shrink or crack

2. Resists tears and punctures

3. Extends shelf life

4. Offers 100% clear transparency

Carton windows of "Mylar" give clear transparency and lasting protection to products like these

You can give your product protection *plus* the added sales appeal of visibility when you package in window cartons made with strong, durable Du Pont "Mylar"* polyester film.

Windows of "Mylar" have excellent tear and puncture resistance, exceptional impact strength, long life. "Mylar" is unaffected by grease and oils. And its superior dimensional stability prevents box warping. In addition, "Mylar" gives your window boxes the advantages of brilliant, sales-winning transparency.

Be sure to specify windows of "Mylar" on your next carton order.

For the full story, call your carton supplier or write: E. I. du Pont de Nemours & Co. (Inc.), Film Department, Wilmington 98, Delaware.

*"Mylar" is Du Pont's registered trademark for its brand of polyester film. Du Pont does not make window boxes

DU PONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DU PONT MYLAR® POLYESTER FILM

New Youngstown facilities will assure

TIN PLATE FOR PACKAGING

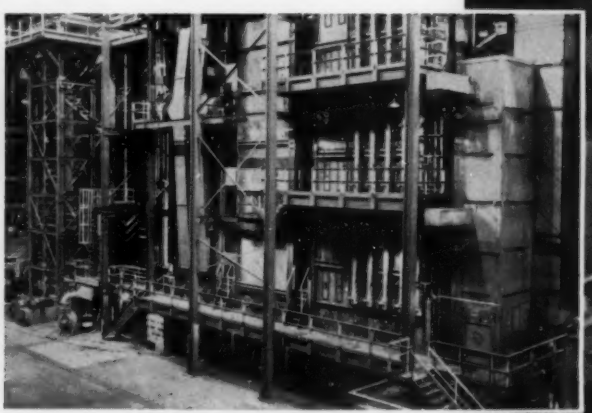
in his day

Tin plate—in increasing quantity and quality—will be as essential to the packaging of products in *his* day as it was in Dad's time.

Continuing advancements in facilities, research, and techniques make certain that when *he* and millions of others are ready for such products . . . *Youngstown Tin Plate will help package them.*

Photos below show scenes in Youngstown's new, ultra-modern No. 2 Tin Mill at Indiana Harbor. This expansion program will approximately double our capacity to supply canmakers the finest tin plate available anywhere.

Here coils of Youngstown cold reduced and annealed steel are welded end to end for subsequent tin plating to produce high quality tin plate.



This ultra-modern, high-speed, continuous annealing unit processes cold rolled strip prior to its being electrolytically coated with tin.

THE

Youngstown

SHEET AND TUBE COMPANY

Youngstown, Ohio

Manufacturers of Carbon, Alloy and Yoloy Steel

Small Package with
BIG BENEFITS

Johnson & Johnson
DENTAL FLOSS

Attractive, sales quickening, the clear blue plastic cover displays the product, protected from dust and dirt . . . announces when to buy more.

★ EASE of ASSEMBLY

Custom molded undercut in plastic cover enables smooth, precise, 1-push snapping into metal base.

CREATIVELY PRODUCED BY
DILLON-BECK
SPECIALISTS in CUSTOM MOLDING and SALES-STIMULATING PLASTIC PACKAGING

★ DESIGNS & MODELS
★ MOLD and DIE CONSTRUCTION
★ MOLDING & ASSEMBLY of THERMOPLASTICS RANGING from 1 to 16 ozs.

Inquiries Invited
DILLON-BECK
MANUFACTURING CO.
Designers • Molders • Producers of *Purposeful* Plastic Products
1227 CENTRAL AVENUE
HILLSIDE, NEW JERSEY

[*Continued from page 216*]

tives Amendment to the Food, Drug & Cosmetics Act.

Tuesday's all-day sessions will cover drug and pharmaceutical packaging, production line and machinery, and package printing, interrupted at noon for luncheon and a guest speaker.

Wednesday morning seminars will discuss industrial packaging, food packaging and closures, followed by luncheon and a guest speaker.

PI awards for the year and a guest speaker are scheduled for the annual awards dinner Tuesday night.

Roy W. Abling of the Merck Sharp & Dohme Div., Merck & Co., Inc., is chairman of the forum plans committee.

A new multiple-use registration ticket will enable as many as three different persons from one company to use each day's ticket and as many as nine from each company purchasing the three-day combination. In addition, stubs are provided for the day's luncheon and for free admission to the Machinery Show.

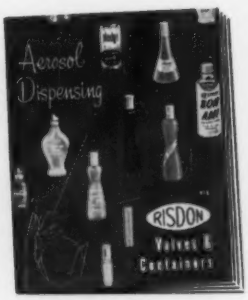
Member registration is $23 each for the Monday and Tuesday PI sessions, and $18 for the Wednesday session; the non-member fee is $28 each for the first two days and $23 for the last day. Three-day combination rates are $60 for members and $75 for non-members.

Meanwhile, professional members of PI will meet Thursday, Oct. 1, at the Sheraton-Blackstone Hotel, Chicago, for a day-long round-table session by a panel of experts on dairy-food packaging, who will answer questions submitted in advance.

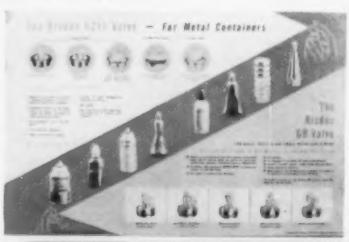
Professional-meeting panelists include R. Reid McNamara, president, Sealright Co.; Norman Hartmann, vice president, Pure-Pak Div. of Ex-Cell-O Corp.; Edward G. Penn, Riegel Paper Corp.; R. W. Loheed, Charles T. Main, Inc.; David Reid, The Borden Co.; Harold Pratt, Jr., Joe Lowe Corp.; Arthur Dalton, Bowman Dairy Co.; Robert A. Farrell, Marathon Div. of American Can; C. P. Whittier, Owens-Illinois, and R. M. Holmes, Bloomer Bros. Co.

Questions to be answered by the panel should be submitted in advance to the Packaging Institute, 342 Madison Ave., New York 17, which is also handling advance registrations ($15). ●

New Booklet On
AEROSOL DISPENSING
Via RISDON
Valves & Complete Containers



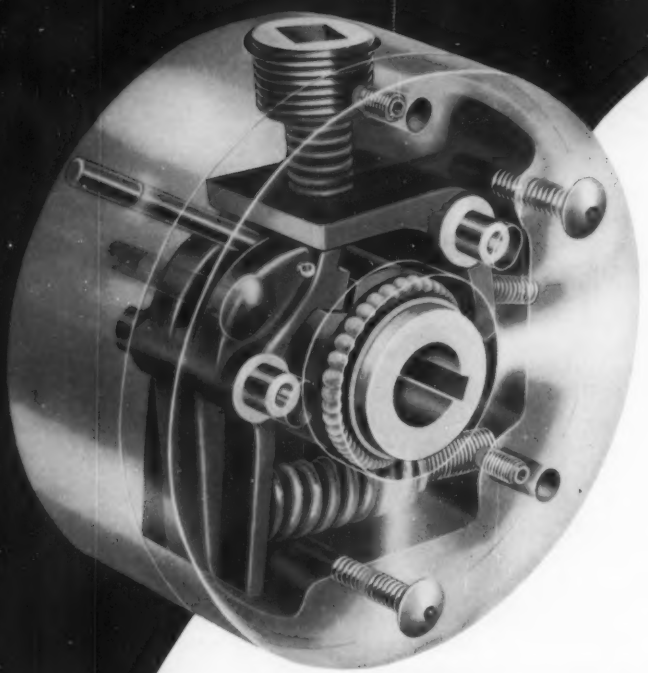
To up-date your knowledge of what's new in aerosol dispensing and packaging, send for this free Risdon booklet. It covers the complete Risdon line in 16 colorful, illustrated pages. Helps you to select the type of Risdon valve or dispenser best suited for your product whether packaged in glass, metal or plastic.



Includes details on Risdon's GB Valve, Micro-Mist® Valve, small and large capacity metering valves, 5210 Valve, special actuators and on Risdon's line of complete aerosol-dispensing containers. Actual size illustrations show the Mini-Mist® and Vaniti-Mist® refillable containers and the Handi-Mist® non-refillable package.

Send For Your Free Copy
THE RISDON MANUFACTURING CO.
AEROSOL DIVISION
NAUGATUCK, CONN.
RI-116

How to control power-drive overloads in packaging . . .



When indexing, either intermittently or continuous, with various packaging machines, you can be sure of complete drive control and overload protection with . . .

CENTRIC'S "*TRIG-O-MATIC*" OVERLOAD RELEASE CLUTCHES

"Trig-O-Matics" are mechanical devices that automatically torque-limit power drives. They can be arranged to shut off a drive when an overload occurs—as well as to set up an alarm signal, indicating an overload.

Trigger action of the clutch at the point of overload is instantaneous, positive. Down-time is reduced to minutes . . . just long enough to eliminate the overload and to set the drive again to running position.

"Trig-O-Matics" are fool proof, nontamperable. They're service free. Do not require lubrication or adjustment.

Are delivered as complete units—ready to install with flexible couplings (shaft-to-shaft), sprockets, pulleys, sheaves and gears. There are no extras to buy.

Standard design **"Trig-O-Matics"** have a capacity range from 7 "lbs. to 30,000 "lbs.

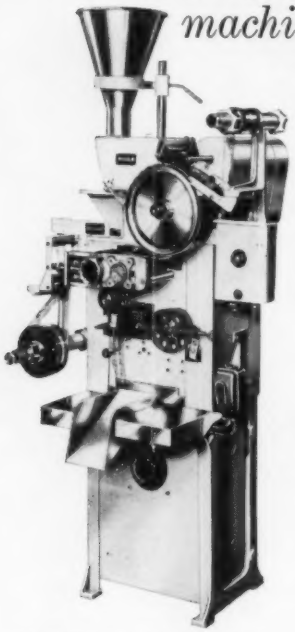
Send for

Bulletin #304 completely describing "Trig-O-Matics"

CENTRIC *Clutch Company*

P. O. Box 175 • Main Street & Route 35 • Woodbridge, N. J.

ARENCO
introduces the new
KISAB
line of high-speed packaging machinery



Kisab TMK typifies the Kisab line; wraps as many as 18,000 tablets or similar objects per hour in heat-sealing cellophane, aluminum foil or like materials. Handles tablets up to 1½" in diameter.

KISAB machines can package anything: liquids, powders, granular substances, spices, tablets, lollipops, candy, ice cream sticks, hard products like combs, razor blades, tooth brushes.

KISAB machines operate with any packaging material: cellulose film, aluminum foil, cellophane, acetate, Saran, Pliofilm, cotton paper.

KISAB machines are precision-built by Swedish craftsmen to run at output speeds as high as 300 packages a minute. Write today for further information.

Complete parts and servicing facilities are maintained at . . .

ARENCO

ARENCO MACHINE COMPANY
INCORPORATED
25 West 43rd Street • New York 36, N.Y.

MANUFACTURERS OF FILLING, CAPPING, SEALING AND PACKING MACHINES.

In-plant training-program progress

Fred Mehl's recent appointment by the Arthur Colton Co., Detroit, as manufacturing coordinator for Colton-Hope filling equipment is the result of a comprehensive apprenticeship toolmaker training program that has been carried out by Snyder Corp. (parent company of the Colton firm) for many years to develop toolmakers and future management supervisors. Mr. Mehl graduated from the Colton apprentice school on Dec. 16, 1954, one of some 50 toolmakers to have graduated from the Snyder program in the past 10 years.

According to Kenneth B. Hollidge, Arthur Colton Co. vice president, his company regards this training program as one of its most important management considerations. Experience has shown, he states, that modern, high-speed filling, tabletting and packaging equipment cannot give optimum performance and maximum service life unless it is manufactured and assembled by toolmaker-trained workmen and supervisory personnel.

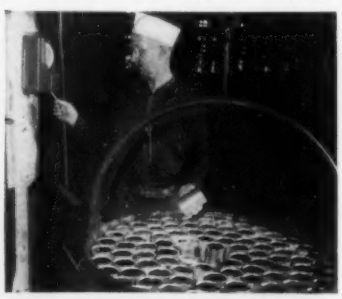
The Snyder program is a four-year training course of comprehensive on-the-job training in which the students are paid a relatively high hourly rate while learning the toolmaking trade. Applicants for the course are given a series of comprehensive specialized aptitude tests in cooperation with the Detroit Board of Education. The students graduate after 8,000 hrs. (usually about four years) and immediately receive about a 10% increase in hourly pay. Pay increases are given the trainees at the end of each 1,000-hr. period.

Fred Mehl is congratulated by Robert Maxvill, assistant superintendent at Colton. At left, Bruce Regan, vice president of manufacturing.

Mr. Mehl's supervisory position came after some years of experience as a toolmaker. Bruce Regan, vice president of manufacturing at Colton, and Robert Maxvill, assistant superintendent (see photo above) are both graduates of the Snyder apprentice school. ●

New method of food sterilization

A new technique in food sterilization—use of pressure-sensitive tape which changes color to indicate sterilization—is now being used by the Larsen Canning Co. of Green Bay, Wis., which reports that the technique has reduced spoilage losses of canned foods to less than 0.01%.



Tape is shown being applied to cans prior to entering retort.

The new 0.008-mil, crepe-paper-backed tape stripes itself automatically with dark brown lines when exposed to 240 deg. F. or more of uniform moist steam-heat pressure. Stripes will not occur if the moist steam-heat pressure is not uniform. Thus, inspectors can tell at a glance if the sterilization process has been completed.

The Larsen company is using the new technique to mark test cans for positive check against improper processing in retorts where the sterilization occurs. The application is reported to be quite simple. Short strips of the tape are tabbed to various cans in the retort. The degree of color change varies with the temperature and duration of exposure.

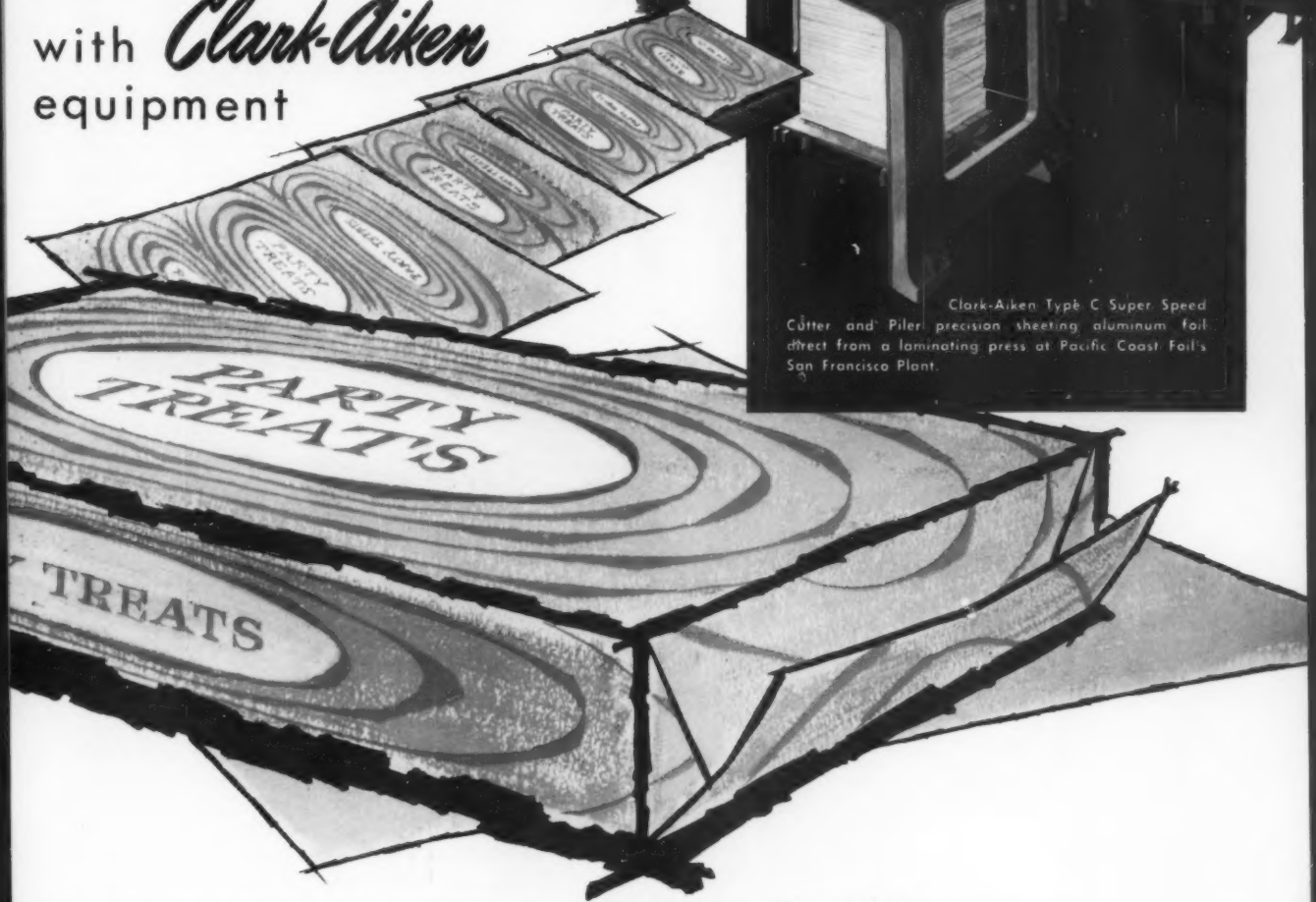
The new tape, which can be written on with pen, pencil or crayon, can be peeled off easily. The tape is also used by hospitals to indicate that surgical bundles have been properly autoclaved.

SUPPLIES AND SERVICES: "Scotch" brand Autoclave Tape No. 222 by Minnesota Mining & Mfg., St. Paul 6, Minn. ●

packaging profits start in the finishing room

with *Clark-Aiken* equipment

Clark-Aiken Type C Super Speed Cutter and Piler precision sheeting aluminum foil direct from a laminating press at Pacific Coast Foil's San Francisco Plant.



Pacific Coast Foil Company found the versatility of their Clark-Aiken Sheeter makes it a profitable adjunct to their aluminum foil converting operation because it cuts production time and shortens delivery schedules.

In addition their Clark-Aiken Cutter-Piler enables them to handle, with ease, a wide weight range of laminated materials, single roll feeding of the lightest weight substances and any sheet size common to converting operations. It also adjusts quickly to rapid short-run changeovers to different sheet lengths and cuts maintenance costs to a minimum.

tailored by Clark-Aiken engineers to fit your precise requirements for practical automation

Realize increased production, lower operating costs and negligible maintenance in your own converting operation. Turn to Clark-Aiken for qualified answers to all of your finishing room production problems.

Knowledgeable Clark-Aiken engineers, well grounded in every phase of paper industry operations, will carefully analyze your finishing room problems and make recommendations based on **your** needs and **your** shop conditions. They will design one, or many machines, to your requirements and help you realize the benefits that only modern production techniques and up-to-date machinery can give you.

Clark-Aiken's practical approach to automation with specially designed, low maintenance, high speed production machinery may be the answer to your needs, too, for a better control of costs. Consult Clark-Aiken today.

THE *Clark-Aiken* COMPANY

795 HART AVENUE

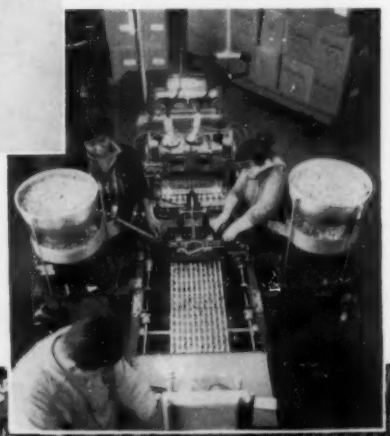
LEE, MASSACHUSETTS

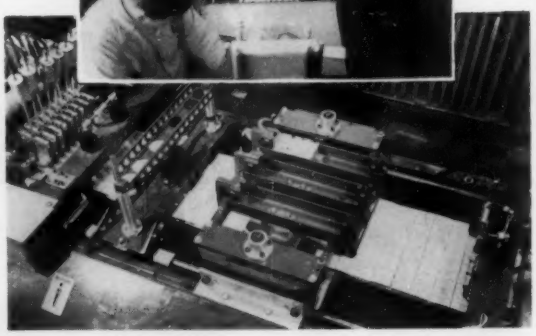
Canadian Representative: Gordon Keates, 133 Flora Drive, Scarborough, Ontario

The accepted adhesive for "blister" packaging

PROXSEAL®

Proxseal thermoplastic adhesive plays a vital part in the "blister" packaging of G. E. flashlight bulbs. The completed package has two strips of stock with five bulbs mounted on each—easily separated by tear tape for display.





This photo (right) shows how G. E. flashlight bulbs are introduced into a vacuum formed web of Celanese acetate. The lower photo shows the final steps in this continuous unit—sealing the packaged bulbs to imprinted board from the Nevins Company, which has been coated with Proxseal. The result—a snug and functional package, completely protecting – as well as displaying – each individual G. E. flashlight bulb.

Credits to
General Electric Co.
Celanese Corp.
The Nevins Company
Packaging Industries, Ltd.

Write or phone for information on how we can help solve your own heat sealing problems.

Pyroxylin PRODUCTS, INC.

CHICAGO 32 Virginia 7-4800

PAOLI, PENNA. PAOLI 4141

Pliability tester

[*Continued from page 154*]

comparing other forms of barriers such as waterproof, water-vaporproof and utility barrier materials.

Recommendations

Based on the development work and on the modification work, the following recommendations are made:

1. The pliability tester should be adopted as a standard instrument for measuring the pliability of military greaseproof barrier materials. A military specification covering construction, operation, detailed testing procedure, calibration and adjustment of the pliability tester is currently being processed.

2. The military specification for greaseproof barrier materials (Specification MIL-B-121A) should be amended or revised to include a requirement for pliability and a procedure established (as above) for measuring this property with the pliability tester.

3. The requirement for pliability for Grade A, Type I, Classes 1 and 2 materials should be 14 lbs. for flat materials and 7 lbs. for stretchable materials. The pliability requirement for Grade A, Types II and III, Classes 1 and 2 materials should be 10 lbs. for flat materials and 5 lbs. for stretchable materials. The requirement for pliability for all Grade C materials (Types I and II, as well as Classes 1 and 2) should be placed at 14 pounds. These values, in pounds, are the maximum acceptable in their categories.

4. The pliability test should be conducted only on unaged material.

5. The spring-back requirement for greaseproof barrier materials should be eliminated from Specifications MIL-B-121A in a future amendment or revision, at such time as the requirement for pliability is included.

6. Additional studies should be undertaken to broaden the application of the pliability tester to include waterproof barrier materials, water-vaporproof barrier materials, utility barrier materials and other wrapping materials where pliability is an important factor.

References

1. Wharton, Thomas P., "A Tester for Pliability," MODERN PACKAGING *28 (11)*, 127-130, 174, 176-178 (July, 1935). ●

As for progress, the most brilliant achievement of the corrugated-container industry in recent years has been its transformation of the shipping box from a drab, utilitarian container into a colorful, well-designed aid to modern merchandising and advertising. This has been done through improved printing surfaces, improved printing processes and a general campaign to make packagers conscious of the merchandising power of the shipping container. Today, the corrugated container plays a dual role.

QUOTED FROM
MODERN PACKAGING
OCTOBER 1958

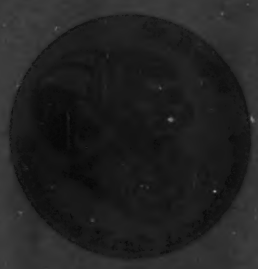
TALK ABOUT PROGRESS IN SHIPPING CONTAINERS ...LEADS RIGHT TO ST. REGIS SEMINOLE

Like the editors of Modern Packaging, we realize that the corrugated container today is more than just a vehicle to ship and protect your product. It's become a vehicle for identification, advertising and merchandising.

To meet this need, we created St. Regis Seminole—the ultimate in linerboard for both protection and printability. This strong, superior kraft, with its smoother, uniform surface and light color, gives new contrast and crispness to your brand name and selling message. Even detailed trademarks register clearly.

Make this new standard of quality part of your packaging program. When you talk to your boxmaker, specify St. Regis Seminole!

This insert is printed on 42# St. Regis Seminole



St.Regis PAPER COMPANY

150 EAST 42nd STREET, NEW YORK 17, N.Y.

Sales Offices: NEW YORK · E. PEPPERELL (MASS.) · ATLANTA · PENSACOLA · CHICAGO · CINCINNATI · SAN FRANCISCO · LOS ANGELES · TACOMA

Quick-change cartoner

[*Continued from page 113*]

carrier plates that form a floor for the product pocket and which can be quickly added or removed for products of different size.

An electric switch, located on the product conveyor, is actuated each time a container enters the machine. This no-product, no-carton mechanism opens the vacuum system, permitting a carton to be set up.

The product pans or trays are loaded horizontally by cam-operated arms that smoothly push the aluminum containers across a narrow dead plate into the opened cartons. A pivoted arm, connected to a switch, stops the machine if the product is heaped too high to enter the carton or is otherwise misaligned.

Cartons are closed by conventional "zipper-type" plows that consecutively squeeze the locking tabs into place. However, heated shoes and spools have been added to this unit to pre-soften the carton and insure that the tabs will lock at higher packaging speeds. The plows are not adjustable for differences in carton thickness, but are designed as a change part that requires only a few minutes to remove and replace.

The first pilot model of the machine, which is now commercially available, was developed at the Waseca plant with the cooperation of Birds Eye engineers. ●

Sounding Board

[*Continued from page 76*]

automatic counter displays. For example, teamwork with packaging executives at Bell & Howell and the packaging producer led to a new approach that, in effect, makes every package for a medium-priced camera a counter display piece and makes every shipping carton a tool for strong corporate identification. Savings in protective package construction are sometimes sufficient to pay for highly effective color reproduction that sell the camera's color capabilities and for significant upgrading of packaging materials.

Consideration to double the use of protective elements has also led to a highly successful display package of home barber kits, merchandised by Toastmaster. Here, up to 12 indi-

[*Continued on page 230*]

It's all in the family

If your products are in a family way, you can't do better than to fit them out in high quality, color-true WS package components.

- Lead, Tin and Aluminum TUBES
- Hard and Soft PLASTIC CAPS
- Plastic Tips, Sifter Tops, All Standard FITMENTS

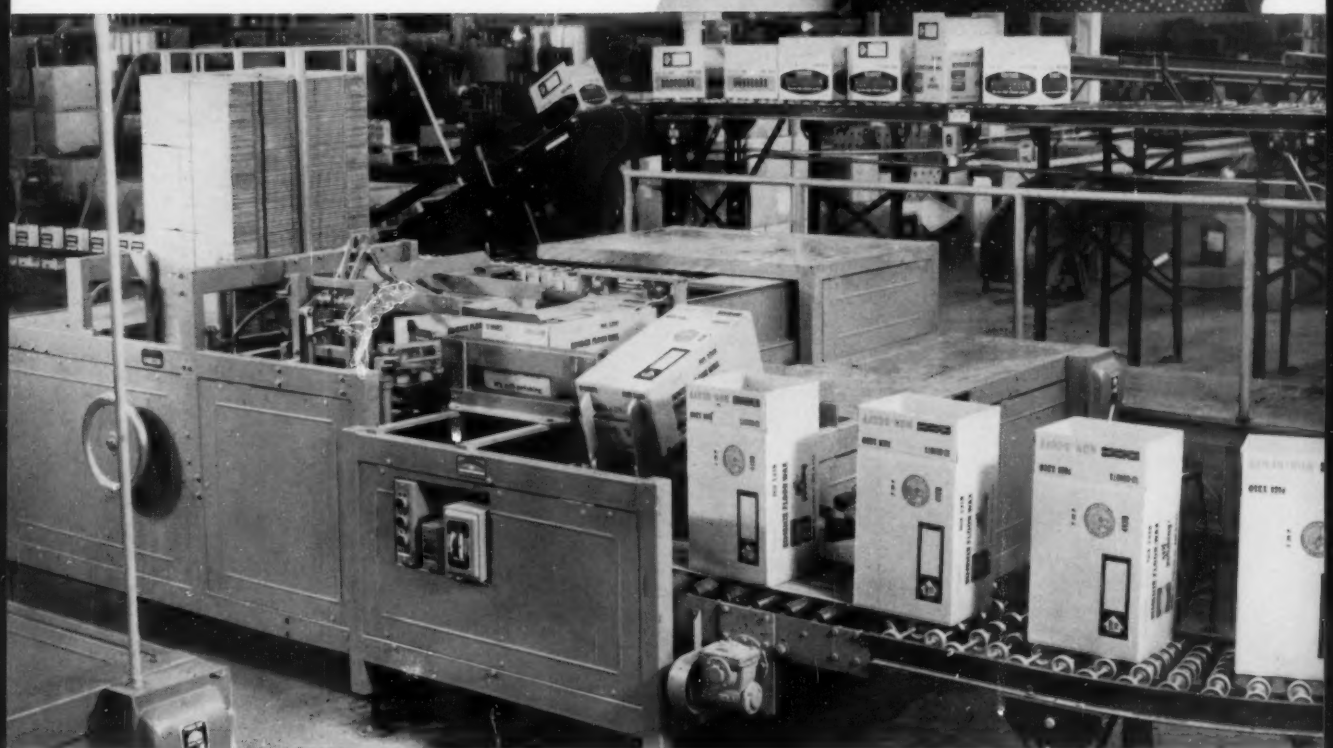
Talk over your requirements with your WS salesman, write direct, or phone collect to our nearest factory.

New York, N. Y.	Oxford 7-1346
Chicago, Ill.	Palisades 5-3020
Cleveland, Ohio	Academy 6-5757
Cincinnati, Ohio	Parkway 1-5736
St. Louis, Mo.	Parkview 7-7380
Los Angeles, Calif.	Pleasant 2-0791

WHEELING STAMPING CO.
WHEELING W. VA.
WSCO

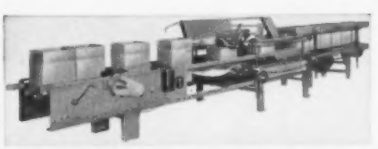
Simoniz
puts "protection"
in a can

Packomatic®
puts the cans in a case



Packomatic equipment feeds, forms, positions, loads, seals and imprints corrugated shipping containers automatically. However you ship—in multi-ply paper bags, or in corrugated shipping containers; whatever you "package"—a can, a carton, a box or a bale—there's a Packomatic machine designed to handle your shipping container requirements. Packomatic machines, geared to your production line, will feed, form, position, load, seal and imprint corrugated containers automatically—or do any of these operations singly as a complement to your existing packaging facilities. Let one of our sales engineers suggest the start of a long-range packaging program for your plant. Investigate the Packomatic method of cutting costs and boosting production. Call, write or wire today.

Fully-automatic Packomatic Case Former-Loader, part of a fully-automated production line at the Simoniz plant, Kankakee, Illinois. Other Packomatics on the Simoniz line include Case Sealers and Case Imprinters.

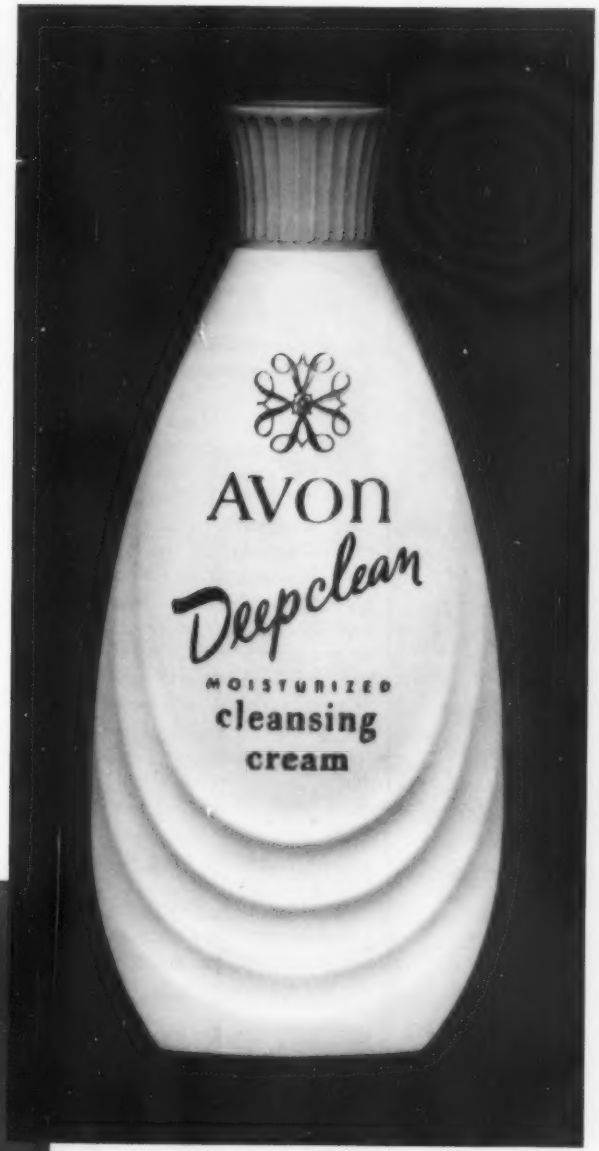


Begin to automate your packaging line with this high-speed, fully-automatic Case Sealer. Aligns loaded cases, positions flaps, glues, seals and discharges—and no operator needed! Available in wide range of sizes. Semi-automatic, too. Call or write for additional information.

J. L. FERGUSON CO. Joliet 3, Illinois

PACKOMATICS include the Bale Sealer • Case Sealers • Opener-Loaders • Case Imprinters • Telescoping Volumetric Fillers • Packer-Gluers • Semi-automatic or fully-automatic.

Avon calls on hi-fax® for a modern bottle



Typical of the dramatic decorative effects possible in modern Hi-fax bottles is the sharp detailing of the hot-stamped lettering on this handsome, lightweight Avon package.
Molded with Hi-fax by IMCO Container Corp., Kansas City, Missouri

Hi-fax is the truly modern plastic for modern packaging. In designing this attractive, high-styled new container for Avon Deepclean moisturized cleansing cream, IMCO naturally selected Hi-fax. Mr. Richard V. Vosburgh, Executive Vice President of IMCO, explains it this way:

"Excessive bottle collapse, together with an oily surface penetration of the product, necessitated the selection of Hi-fax to completely remedy this packaging problem."

The result was a low-cost, high-quality, attractively designed container that lives up to the Avon reputation for the best.

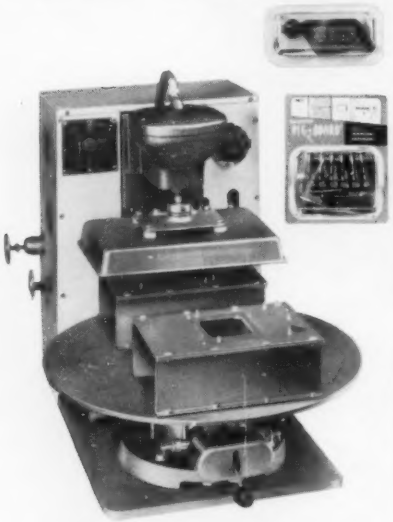
Tough yet lightweight, Hi-fax is resistant to heat and many chemicals and lends itself to colorful packaging design. Technical information on Hi-fax can be obtained directly from Hercules.

HERCULES POWDER COMPANY
INCORPORATED
900 Market Street, Wilmington 99, Delaware

CP59-13

New, low cost BUBBLE SEALER

1 package every 3 seconds



Automatic CLEAR-PAK Jr.

A modest initial outlay brings high speed, plastic bubble-seal packaging to your plant. New Clear-Pak Jr. delivers short run, "show-case" packaging for almost any type of small product. One operation contour-seals a package every three seconds . . . anyone can do it!

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Versatile . . . you change-over to different shapes and sizes in less than ten minutes. Inexpensive dies . . . can be made in your own plant.

Send today for Clear-Pak Jr. literature or contact one of the following representatives:

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ERDCO ENGINEERING CORP.

Dept. MP, Addison, Illinois

ERDCO *Manufacturers of packaging machinery and industrial electronic heating equipment*

9505

[*Continued from page 227*]

vidual items are displayed effectively, with a strong display card and easel element included in the shipping pack. Here, once again, the final payoff idea came through effective teamwork with the Toastmaster product design executive and the carton producer.

James J. Barnett, *Purchasing Agent, Reddi-Wip, Inc.:* The cost of packaging can be considered a total loss unless, of course, the package is designed to work for you.

At one time, our 12-pack and 24-pack corrugated cartons were just cartons, printed with the Reddi-Wip, Inc., logotype. The proposal was made to use the carton as a traveling billboard. Our advertising agency worked up an attractive design that tied the product in with its use as a real cream dessert topping.

I decided to kill two birds with one stone. Extensive tests were conducted on the cartons. These tests conclusively proved that we were "over cartoned." Our 24-pack cartons were reduced from 200-lb. test to 175-lb.; 12-packs were reduced from 200-lb. test to 125-lb. test. The end result was a more attractive carton at a substantial and very attractive annual cost savings.

Martin Fox, *Vice President, Austin Packing Co., Inc.:* We always used printed #450 cellophane on our 5-cent packages of peanut-butter sandwiches. We changed over to #300 plain and a narrower band of #300 printed cellophane. By adding a solvent wheel we tacked the two-sheets before they enter the wrapping head on the packaging machine. This gives us a double wall of 300-gauge cellophane and improved the package strength over the former method and reduced the cost 60 cents per thousand wraps. As we are producing 500,000 packages of this type daily, the saving has been considerable.

Joe Weix, Jr., *Oconomowoc Canning Co.:* Just recently we have redesigned the label for our Land O'Lakes line of canned vegetable

how to **"PEEL"** *residue glue from a coating tank...*

apply

RELEASE-COTE

the miracle **RELEASING AGENT**

With just a thin film of RELEASE-COTE on tank surfaces, glue and adhesives peel "like skin off a banana."

FREE
TRY OUT OFFER!

A generous sample of RELEASE-COTE for you to test. (Note how operators like Release-Cote's gentleness to their hands).

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POTDEVIN MACHINE CO.

244 North Street, Teterboro, N. J.

World's largest producer of coating machines.

A-C® Polyethylene

CARTON COATINGS OFFER 7-WAY PROTECTION

- No more fiber scratch
- Improved scuff resistance
- Higher chemical resistance
- High grease resistance
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- Moisture resistance
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Allied Chemical

If grease, moisture or fine finishes present packaging problems for your product, here's how you can pack and ship them safely *without recourse to costly carton liners:*

Incorporate A-C Polyethylene into your present carton-coating operation! It will eliminate fiber scratch and scuffing, give your cartons adequate resistance to grease, water and chemicals.

A-C Polyethylene can save you money, too. When you add it to ordinary wax coatings, *penetration is drastically reduced,* resulting in less wax consumption. For example, with straight paraffin, the normal coating weight is 7-8 lbs./1000 sq. ft. With addition of A-C Polyethylene, *it is frequently reduced to 3-5 lbs./1000 sq. ft. with superior protection!*

Write for literature, free samples. Free samples and technical data are now ready for your evaluation. Just write us at the address below. Or ask your local Semet-Solvay representative for a demonstration in your own plant. He can show you, right on your own equipment, how A-C Polyethylene can improve your cartons, save you money at the same time! *Contact us for the names of processors in your area who make up blends of A-C Polyethylene and wax.*

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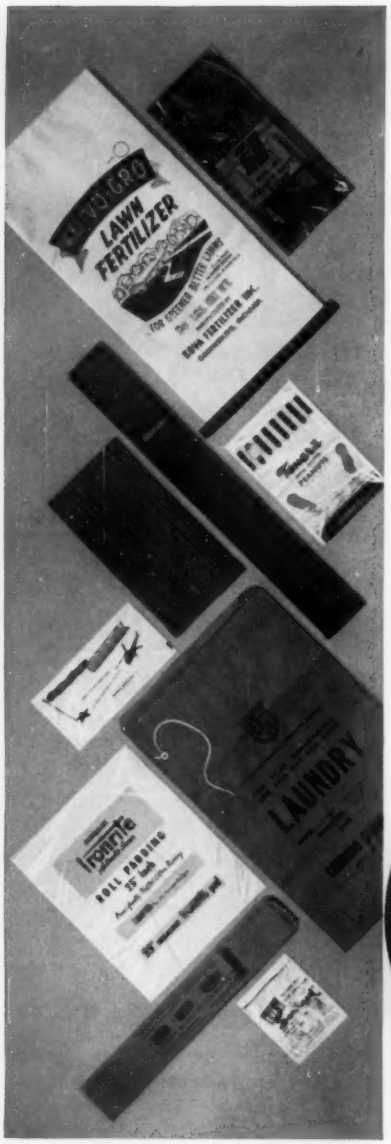
National Distribution • Warehousing in Principal Cities



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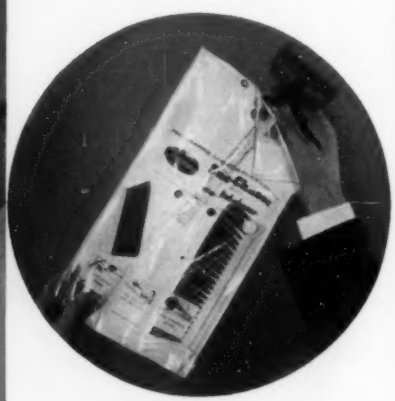

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in Krinkle Kraft, Clupak, Kraft, Plastic Film, Foil, or combinations of these materials, *CALL KENNEDY FIRST.*

Write today for "THIS IS KENNEDY", 16-page illustrated booklet that shows what Kennedy can do for you.

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KENNEDY CAR LINER & BAG CO., INC.
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products. There are a number of different products under this label. The assignment given to our label designer was to develop a design that could be used on this family of products. Label costs were kept to a minimum by a clever use of vignettes. A standardized background design was used for all products and an oval vignette was incorporated. Through this design, standardized stock vignettes could be utilized. This kept original artwork on each label to a minimum, eliminated difficult registry problems and kept plate make-up charges to a minimum. ●

Price-marking problem

[*Continued from page 103*]

Lever Bros. considers justifiable.

Similarly, without printing the price on paperboard carriers, the Coca Cola Co. has solved the problem of a price offer for a six-bottle multipack seen in New York supermarkets simply by slipping a one-color-printed, die-cut paper neck label over the center bottle on one side of each carrier.

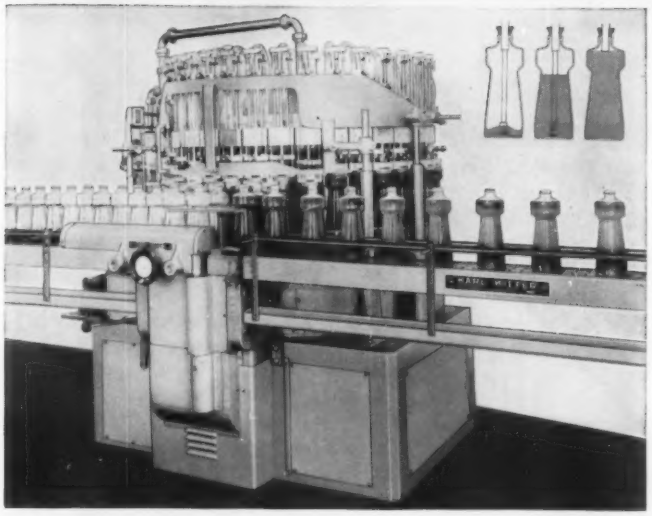
Shoppers do not want printed prices on packages that are destined to be given away as gifts. Thus a removable price mark is called for and it must be such that it will not mar the package in removal. This is being accomplished with pressure-sensitive labels that are easy to take off, with removable hang tags and sometimes with adhesive labels that have a perforated tear-off section showing price, such as are seen on Schrafft's confectionery packages.

One thing can be said for production-line price printing: It is always clear and legible. There is no smudging to waste the time and invite the errors of a checker trying to figure it out. "Illegible marks can take as much as 15 seconds at check-out," says one retailer, "to say nothing of a store's losses because a checker reads a price wrong."

Pre-pricing of health and beauty aids to itemize and include the Federal tax is also a help to the retailer in speeding the check-out operation. Toni permanent-wave packages follow this practice, which is particularly welcome in supermarkets where clerks are not accustomed to charging the cosmetic tax.

It is quite apparent that the whole

Kiefer MOVES WITH THE BEST PEOPLE -Come Along!



KARL KIEFER VACUUM FILLER

functions with stems SUBMERGED from start to finish of fill. Greatly enhanced speed attained even with an extremely foamy product, too. You'll find hardly a bubble. Filling height ADJUSTABLE while the machine is in motion.

Here shown is PROCTER & GAMBLE'S Mr. Clean going fast

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REPRINTS of "CRISIS: the New Food Law"

"CRISIS: the New Food Law" This comprehensive study of the new Food Additives Amendment, which appeared as a series of three articles in MODERN PACKAGING, is available as a 20-page, two-color brochure.

The articles represent a complete analysis of the new law and its effects. Greatest emphasis is given to the critical effects possible in the future.

Also reprinted in the brochure is a pertinent MODERN PACKAGING article entitled "Extractability Testing," which outlines the principles and methods that should govern procedures to establish safety of packaging materials under the Amendment.

The reprint is already in wide demand as a valuable addition to the libraries of food packagers and their suppliers. It is also being ordered for sales staffs throughout the industry.

Single copies are available at $1.00 per copy. Bulk rates on request.

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don't let your sales manager be a

"PACKAGING ORPHAN"

In your company he may be called the Sales Manager . . . or the Merchandise Manager . . . or the Distribution Manager; the title isn't important. The chap we're talking about is the one whose interest in the packaging function sometimes may be considered secondary, while the successful completion of his duties depends in a significant measure on the appearance of your company's packages and the protection they give to your products.

If this man, whatever his title may be, doesn't get his own personal copy of Modern Packaging every month to keep him up-to-date, you've a "packaging orphan" on your hands. While he should be, he probably *isn't* up on all the latest techniques of package merchandising, on how to package to obtain sales in multiple units, on what's "hot" in protective and decorative packaging. . . .

Modern Packaging isn't a cure-all for this man, but it will keep him posted on the important packaging developments he ought to know about. A twelve month subscription—including the famous annual Encyclopedia Issue—for him costs only $7.00 in the United States and Canada, $25.00 elsewhere. Write today; we'll enter his subscription immediately and bill your company later.

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problem of retail price marking is due for an overhaul and that the trend to pre-pricing may bring about some changes in the current pricing concepts.

In all this, one thing seems certain: The next few years should see striking improvements over present tedious hand-stamp procedures. ●

Flexible packages—

[*Continued from page 149*]

regarding delamination and differential shrink of laminates has been found between the same laminations for various suppliers and also between different deliveries of the same laminate which were received from one supplier.

In an initial product evaluation, the peaches in the flexible package appeared to be slightly darker in color than in the plain can. It is possible that the plain can had some bleaching action on the product. The color difference of the product has not visually changed during a four-month period.

Package design. Preliminary rough-handling tests on various package designs have shown that the abuse resistance of a pouch-type package can be improved by incorporating paperboard or other semi-rigid materials into the final package design. The areas of the package which fail first are the areas immediately adjacent to the seals. Failure occurs by flexing of the seal areas, which results in a fracture of the package material with subsequent leakage. Any means of reducing the flexing of the seal areas will improve the abuse resistance of the package. A paperboard folder (Figure 5) has been developed as one possible method. In practice it has been demonstrated that this may be accomplished either before or after processing.

Laminated paperboard has experimentally been used as one wall of a pouch-type package, thus building rigidity into the package. If paperboard is used as a part of the package prior to processing, it naturally must be resistant to process conditions or be protected by a process-resistant material.

Paperboard has been used to build package rigidity after processing by using a die-cut frame glued or heat

[*Continued on page 239*]

WITH IMS SILICONE SPRAY YOU GET

12 FREE CANS

For each gross purchased.

LOOK FOR YOUR FREE BONUS CARD IN EACH BOX!

KEEP YOUR MOLD RELEASE COSTS DOWN

IMS Silicone Spray is specially designed to eliminate sticking problems in the molding and in the food and packaging fields. With the exclusive all-metal, fast acting spray head you get finer atomization every time—conserves costly silicone and goes much further than many other cans using cheaper spray heads — Remember, look for your FREE BONUS card in every box.

PRICES

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$18.00 per dozen

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the AMSCOMATIC® EDGE-SEALED POLY PACKAGE *has everything!*

- BEAUTY
- EYE-APPEAL
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- PROTECTION

...and is the most economical, too!

The AMSCOMATIC 100 PACKAGING UNIT
produces a tight-to-product, edge-sealed polyethylene package automatically.

The Amscomatic Packaging Method obsoletes ordinary wrapping and bagging methods for two good reasons: economy and appearance.

If you are presently packaging in polyethylene (or would like to package your product in polyethylene) the Amscomatic Packaging Method will probably be perfect for you.

Amsco PM inc.

AMSCO PACKAGING MACHINERY, INC.
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US RUBBER PRINTING PLATE MATERIALS

And now

U.S. Rubber introduces the Buna-102 plate material that handles the faster drying inks required for printing on film

Ordinarily the fast-drying inks required to print on film destroy or shorten the life of rubber plates.

But plates made of Buna-102 rubber have long life since they are resistant to the new corrosive inks. This means a sharp cut on costly downtime, elimination of delays and customer irritation.

Buna-102 plates represent an entirely new concept in Buna N compounding.

Williamson & Co., world's largest distributor of rubber and plastic-platemaking materials to the printing trade, offers you this *exclusive* product of U. S. Rubber, together with any technical assistance you may need. Order from any of the Williamson strategically located refrigerated plants.

Caldwell, N. J. *Atlanta, Ga.* *Bryan, Ohio*
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or contact U. S. Rubber direct at Providence, R. I.

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. . . the way my sales jumped and profits exploded when I went to Fairlon* polyethylene film packaging. It brings customers face-to-face with my products. Irresistible! And trouble-free machinability, too, because Fairlon* is the only polyethylene stamped *researched by Chippewa.* That means it's the finest available, made to rigid specifications on specially developed equipment to assure unmatched clarity, strength, and protection for your products. And the way it takes printing. Tremendous! If you're not in competition with me, switch to Fairlon* polyethylene film for perfect packaging.

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For technical assistance or specifications on Fairlon Sheeting and Tubing, contact:*

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Right now, a number of alert buyers are finding answers to their packaging problems through the use of versatile Niemand tubular paper products. Niemand's designers can give you the standout individuality of a custom-designed package or the ultimate economy of a standard unit. Dispenser tops, paper, plastic and metal closures, also available, help add further sales and use appeal. Why not get the facts — learn how merchandising-minded packagers are reaching hundreds of markets with millions of Niemand tubular paper packages — packages that push sales up, pull costs down. Write today!

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Mfrs. of Slitters, Web Guides, Rewinding and Constant Tension Equipment.

[*Continued from page 235*]
sealed over the seal areas to a backing of paperboard. (See Figure 6.) This construction also facilitates opening.

Summary

The feasibility of using plastic film packages for heat-processed foods was studied. Commercial processing methods for attaining sterility of product were found to be satisfactory for use with flexible packages, although there were some limitations. Heat-penetration data were obtained on flexible packages and equivalent can sizes with very favorable results for the flexibles. Laminates containing foil, used experimentally for sliced peaches and beefsteaks, were found to exhibit superior characteristics over single unsupported films with regard to moisture and gas permeability.

The results obtained from this work demonstrate the general feasibility of using foil-laminated packages. Further work on package design is indicated to assure adequate military performance.

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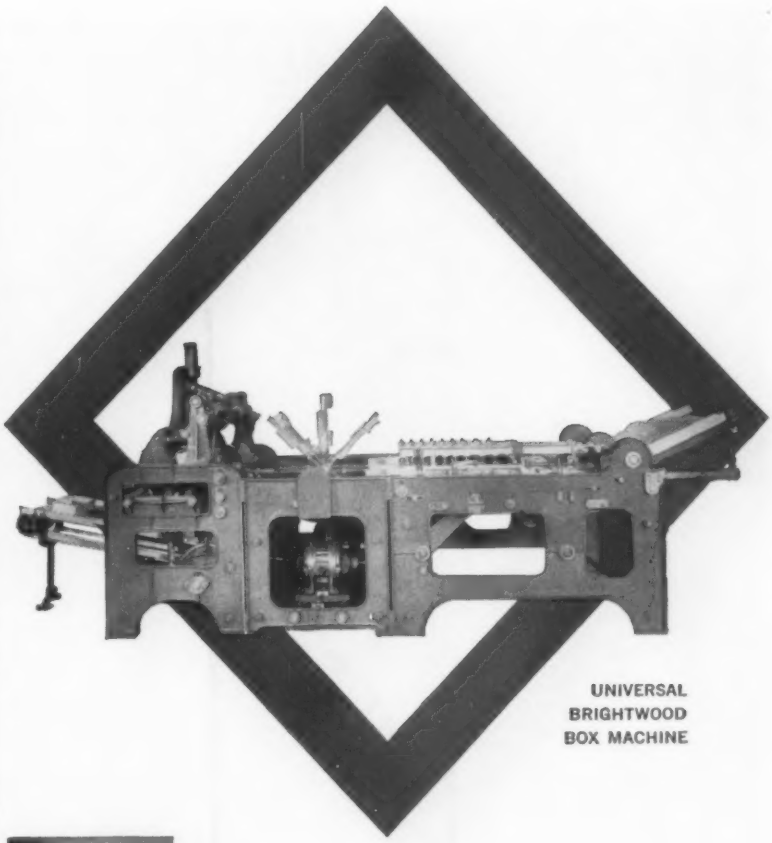
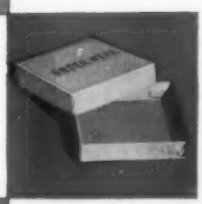


UNIVERSAL
BRIGHTWOOD
BOX MACHINE



QUALITY boxes at lowest cost

In one automatic operation flat printed blanks become perfectly squared, solidly glued boxes for shoes, underwear, corsets, games, candy, etc. — boxes with turned-over ends and finished edges all around, made from double-walled or laminated blanks. Regular glued-end single wall boxes may also be made. A very wide size range can be produced on the one machine.

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Protective packages for aircraft and missile instruments, computers, chemical glassware, and various guidance missile devices, are among custom-molded urethane foam containers developed by Standard Plastics, Inc., for new needs of industry.

. . . says C. D. Snelling, president, Standard Plastics, Inc.

"Our custom-molded urethane foam packaging saves our clients as much as 30% in costs, reduces bulk by one-third and weight by 75%," states Mr. Snelling.

"We proved to our customers that urethane foam has a definite place in the packaging field," he adds, "and 1959 is proving to be the big year in this developing industry.

"The excellent energy absorption of urethane foam at low density and low compression set is supplemented by the economy of this material in terms of cost, space and weight savings. For example, our foam package for magnetron tubes replaced a wooden packing case with rubberized hair at a cost saving of 30%, a cube space reduction of 85% and a weight saving of 65%. This means a reduction of 55 cubic feet per tube package and 157 pounds per unit—pretty important figures to a shipper!

"The no-dust feature of urethane foam is also very important in packaging sensitive instruments and components," says Mr. Snelling. "And the low moisture content (.3%) makes urethane foam virtually chemically inert as well as affording corrosion resistance to silvered surfaces and the like."

Standard Plastics, Inc., was formed in 1954 to mold urethane foam products exclusively. Recently a new 16,000 square foot plant was opened in Fogelsville, Pa., which, incidentally, has urethane foam-lined office interiors for temperature and sound insulation.

Write Mobay for other examples of how urethane foam specialists are working with industry to improve the profits and potential of new products.

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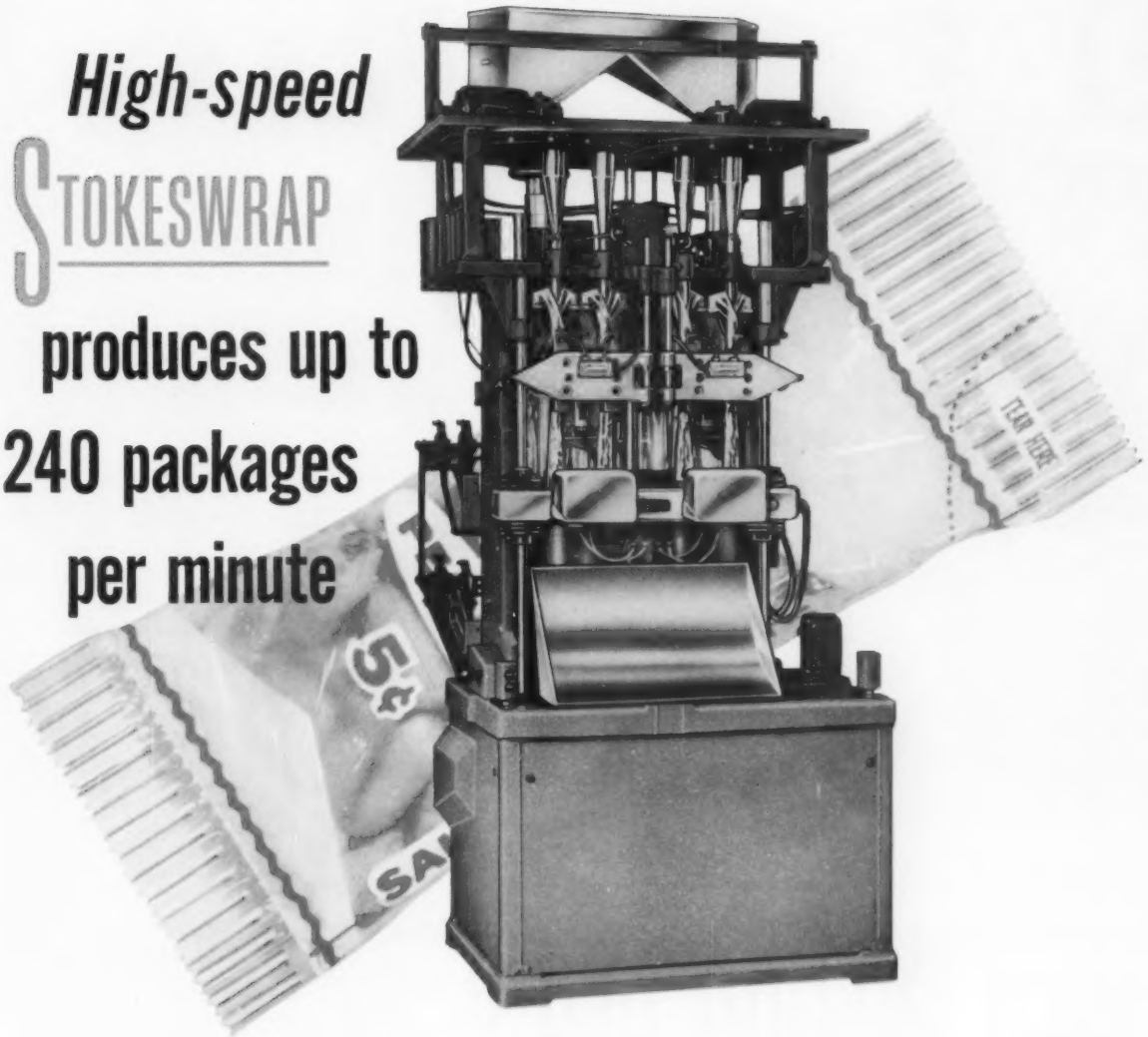

Designed to deliver maximum production in minimum space, the new four-tube Stokeswrap can form, fill and seal as many as 240 flexible packages per minute. One four-tube Stokeswrap costs less than . . . yet equals the output of . . . two conventional two-tube units. It is ideally suited for plants where floor space is limited, where increased production is desired and a replacement for obsolete equipment.

Depending on requirements, the four-tube Stokeswrap will form "pillow" or "four seal" types of packages from printed or unprinted roll stock of most heat sealable materials and laminations. Each tube has its own electric eye registration to assure proper positioning of the package design. Either conventional or impulse sealing can be provided with sealing and cut-off achieved in one simple operation. Webs are held in constant tension to eliminate jamming and other troublesome operations.

Capacities range from one gram to three ounces depending on product characteristics. Package sizes can be handled up to 2⅜″ x 6¾″. Special attachments for strip packaging, gas-fill packaging, coding, imprinting and hole punching can be supplied.

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Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION

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Shipping and storage room at Vactron Corporation, Mansfield, Texas. (Inset) New hold down pad holds TV picture tubes firmly in place, gives added strength to container

HOERNER-DESIGNED CORRUGATED CONTAINER

SAVED $10,000 PER YEAR

Vactron Corporation of Mansfield, Texas manufactures television picture tubes in 138 different sizes and types. When that company began shipping its fine product to distributors they needed a container that protected the tube and was strong enough to stand up under the rigors of shipping and storage.

One of the problems common to manufacturers of cathode ray tubes is carton appearance. Consumers know that TV picture tubes are delicate electronic devices. They are wary about buying a tube that's in a box showing wear.

For this reason, distributors commonly reject any container that shows damage even though the tube itself be in perfect condition. These rejects cost money to ship, re-test, re-pack and re-ship.

A Hoerner Packaging Engineer* helped Vactron overcome this problem and reduce labor and material costs by $10,000 per year. A new hold-down pad was designed to keep the tubes firmly in place and give the corrugated container added strength on the corners.

The new "I" pad is the reason Vactron tubes arrive at the distributor's in clean, sharp-looking corrugated containers. The problem of distributor rejects has been eliminated with a resulting savings in repacking, re-shipping and extra carton inventory costs. Material costs were cut because the "I" pad allowed the use of single-wall instead of double-wall corrugated. And Vactron reclaimed several hundred feet of floor space in the storage area because the "I" pad allowed stacking four and more high without danger of damage to the carton.

HOW A HOERNER PACKAGING ENGINEERING CAN HELP YOU

If you package things, call the Hoerner plant nearest you. A Packaging Engineer will study your operation without obligation. He can increase your profit margin by reducing labor and material costs and shipping losses. All through improved packaging with corrugated. Call today.

* *The Packaging Engineer Responsible: R. G. Hackney.*

HOERNER BOXES, INC.

Corrugated Specialists for Mid-America

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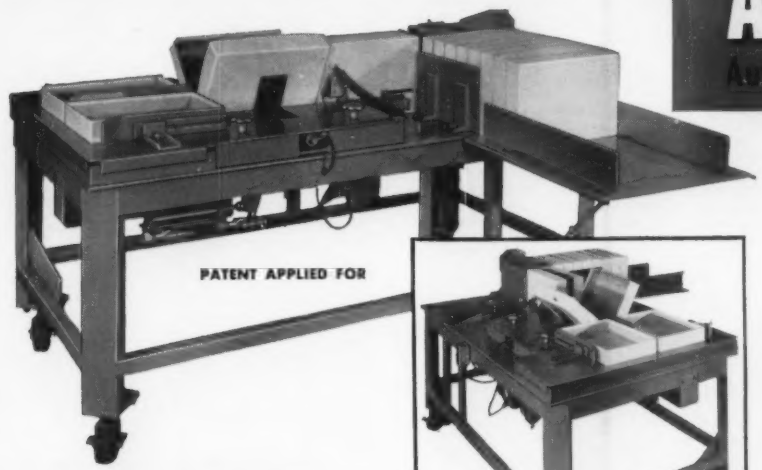
FULLY AUTOMATIC

THE KNOWLTON AUTOCLOSE

Automatic Setup Box Closer



REDUCE COSTS INCREASE OUTPUT

The new Knowlton Autoclose is a fully automatic setup box closer that automatically accepts the output of bases and covers (or lids) from two Automatic Wrappers and combines them. It will close boxes as fast as they are delivered from the Wrappers.

The setup time is short, and the parts necessary to change over from the largest box to the smallest box cost very little.

The Autoclose is controlled by air valves and cylinders exclusively. The approximate 25 lbs. of air pressure which is required is controlled by a regulator provided with the machine.

Autoclose will prove itself a cost saving addition to your Setup Box production line.

M. D. Knowlton COMPANY

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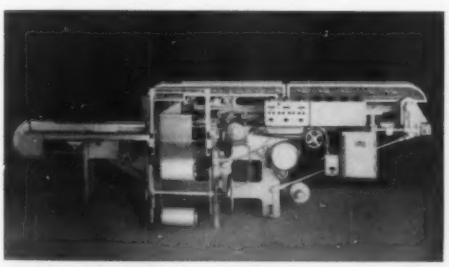
ROCHESTER 14, N.Y.



BATTLE CREEK'S NEW 51-CR WRAPS UP TO 130 FRACTIONAL PACKAGES PER MINUTE! A new high speed wrapping machine has been perfected to produce from 90 to 130 fractional packages per minute. Handles Cellophane (with or without polymer coatings); waxed glassine; or laminated foils. Converts quickly to the usual fractional package sizes, viz: square sodas, rectangular grahams, or rectangular sprayed crackers; in flat stacks. Can be equipped with pin type loaders. Forms a tightly contoured, snug overwrap that assures freshness and flavor retention. In spite of the high speed, the crackers are handled gently through all feeding and wrapping operations. **Battle Creek *"Continuous Flow"* Packaging Machines, Inc., Battle Creek, Michigan.**

The Packaging Industry's Magic Carpet!

CLAREMONT Flock

SEE YOUR PAPER MERCHANT FOR:
Flock-Affixed Papers ...IN ROLLS
Boxboard ...IN SHEETS
(16 brilliant colors)

—Claremont Flock . . . those tiny clipped-lengths of luxurious cotton and regal rayon. We market this irresistible outer raiment in bulk to paper processors, product manufacturers, packaging specialists and display builders who, for dramatic enrichment, apply it to paper, glass, metal, cork, plaster and similar materials.

Flock is a fascinating stimulant—and for pennies, an ounce adds a pound of allure. Check your suppliers—or, for complete information, feel free to contact us direct.

CLAREMONT FLOCK CORPORATION
The Country's Largest Manufacturer of FLOCK
CLAREMONT, NEW HAMPSHIRE

Classified Advertisements

Employment
Business Opportunities
Used or Resale Equipment

Machinery and Equipment For Sale

FOR SALE—MODERN PACKAGING AND FOOD PROCESSING MACHINERY—Pneumatic Scale Automatic Carton Feeder, Bottom Sealers, Wax Liners and Top Sealing Units with interconnecting conveyors. Pneumatic Scale Tite Wrap Machine and Large and Small Liners. Transwrap Machines, one Model A, four side seal and one Model B Volumetric. F. J. Stokes Model 90-D Automatic Stainless Steel Tube Filler and Closer. Colton Model 17-TF Automatic Stainless Steel Tube Filler and Closer. Jones Model CMV Highly flexible Automatic Cartoner. Ceco Model A3901-12 Cartoning Machine. Hayssen Wrappers, all sizes. Package Machinery Models FA, FF, FA2, FA3 and FA4 Wrappers with and without Electric Eyes, also Models F and CM 2 available. Pack-Rapid Model A Wrapper. Battle Creek Model 47B Wrapper. Package Machinery Model PA (Palmer) machines. Fillers, labelers, cappers, mixers, grinders. Complete details and prices available on request. Union Standard Equipment Company, 318 Lafayette Street, New York 12, N.Y. Phone: CAnal 6-5334.

HIGHEST PRICES PAID for your packaging equipment such as wrappers, cartoning units, case sealers, transwraps, bag machines. We are also interested in food and chemical processing machinery. Submit complete details. Union Standard Equipment Co., 318-322 Lafayette Street, New York 12, N.Y.

FOR SALE—One 20" wide two color and one 20" wide three color printing presses suitable for polyethylene. Complete with a large number of cylinders. Both presses are presently in operation. Reply Box No. 1127, Modern Packaging.

CHAMPLAIN CUTTER-CREASER for immediate sale, due to change in production requirements. 44" Cutter-Creaser and complete delivery section without infeed. Infeed section can be provided to customer's specifications, or Cutter-Creaser can be installed inline on new or existing Champlain press. Write Box No. 1119, Modern Packaging, for further details.

MACHINES AND EQUIPMENT FOR SALE—For sale—One Taber Thermobeader duplex machine—for single and double edge beading. Has 3 sets of dies. Good chance for plastic box manufacturer to obtain this machine for fraction of initial cost. Reply: Albany Novelty Mfg. Co., 107 W. Canton St., Boston, Mass.

FOR SALE—15 Avery "KumKlean" automatic Label Dispensers, model E 3.50. These machines strip backing from and dispense adhesive labels for fast assembly line application. Excellent condition—very little use. Offered at $125 each (current list price is $212 each). Kenney Manufacturing Company, Cranston, R.I.

PNEUMATIC SCALE CO.—Duplex Heat Seal Tea Bag Machines with and without taggers, counter and stackers. Several machines available at tremendous savings. Premium prices paid for packaging equipment or complete plants. Write for our brochure. Allied Equipment Co., 940 Nepperhan Avenue, Yonkers, N.Y. Phone: Yonkers 5-0442.

Help Wanted

MAINTENANCE MECHANIC—For Packaging Machinery—experienced man with 5-10 years background in diversified packaging operations, New Jersey. Reply in confidence to Box 1128, Modern Packaging.

PRODUCTION MANAGEMENT OPPORTUNITIES—Expanding division of multi-plant national company, offers unusual opportunities in film extrusion engineering, plant supervision, quality control, flexographic and rotogravure printing, machine designers. These are growth positions for responsible, ambitious men with America's oldest bag maker. Reply to: Plastics Division, Chase Bag Company, 155 East 44th St., New York 17, N. Y.

PACKAGING PERSONNEL

Positions filled and secured. A confidential Nationwide Service for employers seeking personnel and individuals seeking new positions. Inquires invited. Reply to Graphic Arts Employment Service, Est. 1952. Helen M. Winters, Manager: Dept. PAC-8, 307 East 4th Street, Cincinnati 2, Ohio. Phone CHerry 1-2202.

MECHANICAL ENGINEERS—The Equipment Engineering Section of the West Virginia Pulp and Paper Company has immediate openings for Senior Project Engineers with a degree in engineering. Experience in corrugating machinery or bag machinery is desirable. These positions require versatility, creativity and a high degree of mechanical ability to do responsible project engineering work and to supervise Junior Project Engineers. Willingness to travel between equipment manufacturers and plants is essential. Salaries open. Send complete resume in confidence to: Research Director, West Virginia Pulp and Paper Company, Covington, Va.

TECHNICAL SUPERVISOR—This is a growth position in our Central R & D laboratory, Milford, N. J. We desire a thoroughly experienced graduate chemist or chemical engineer to supervise an active solvent coating group. Main responsibilities will include development and service of food packaging, release, phenolic, coated, industrial specialty and many other papers. Candidates should have about ten years background in this field, with particular interest in working closely with manufacturing departments. Please send your resume and salary requirements to: Technical Director, Riegel Paper Corporation, Milford, N.J.

PLANT MANAGER—plastics film extrusion. Leading Eastern Polyethylene Film Extruder is opening new ultra modern branch plant in the Chicago area. Need highly capable young man to take full charge of this operation. Experience in the field desirable, but not essential. Prefer Engineer. Excellent opportunity with growth company in growth industry. Reply Box 1126, Modern Packaging.

SALES REPRESENTATIVES WANTED — Manufacturer of plastic vials and containers has attractive territories available. Outline territory presently covered. If manufacturer's representative, give names of firms you are now representing. Reply Box 1125, Modern Packaging.

WANTED—YOUNG MAN FOR SALES—In packaging field, New York office. Good opportunity. College graduate preferred. Salary, bonus, expenses paid. Send resume experience and education. Replies confidential. Write Box Number 1124, Modern Packaging.

SALESMAN—A midwest industrial paper convertor seeks an experienced salesman for Ohio to sell Industrial Packaging Items and Specialty Paper Bags. Attractive remuneration plan including salary, commission and expenses, in established area. Submit complete resume including record of past earnings, to Box 1123, Modern Packaging.

SALES REPRESENTATIVES WANTED — Leading manufacturer package coding and imprinting attachments seeks qualified sales agents for a few open territories. Excellent potential for livewires. State lines currently handled, territory covered. Reply Box 1122, Modern Packaging.

LABORATORY MANAGER — Nation-wide Flexible Packaging Company with head office in Texas requires a General and Product Development Laboratory Manager with proven ability. The successful candidate for this excellent opportunity will preferably have experience in the flexible packaging and/or coating field. Must have ability to organize, direct and evaluate efforts of laboratory personnel to achieve desired results. College degree. Salary will be commensurate with experience and ability. Our employees know of this ad. Write Box 1121, Modern Packaging, in full confidence and include a complete resume of experience and photo.

PACKAGING ENGINEER — New product orientated company requires engineer with industrial or mechanical degree. Three to five years experience in adopting methods and machinery to high speed packaging operations desirable. Ample opportunity to handle projects from conception to reduction to factory practice. Emphasis on project cost estimating, methods analysis, work layout and equipment selections. Send detailed resume to: W. H. O'Shaughnessy, Johnson's Wax, Racine, Wisconsin.

PACKAGING MATERIALS AND CONTAINER SALESMAN—National Company requires experienced, top caliber man to develop sales and to service leading Food Packers in Eastern U. S. with printed and plain extrusion coatings and molded containers. Salary commensurate with experience. Can lead to management position. Send complete resume. Box 1117, Modern Packaging.

Situations Wanted

ART DIRECTOR—Creative, Mechanical. 12 years experience in packaging, display and label development. Complete knowledge of folding box industry in the engineering, production and printing techniques. (Letterpress or Lithography). A triple-threat man seeks full-time position in industrial or printing concern. Age 44. Prefers New York City area. Reply Box 1118, Modern Packaging.

PLASTIC CONTAINER REPRESENTATIVE—10 years creative sales and engineering experience, selling container to top rated volume accounts. Present following includes manufacturers and packers of cosmetics, pharmaceuticals, food, electrical components, toys and other consumer packaged goods. Now setting up office to represent reliable molders of plastic containers and utility boxes. Send full details to Box 1129, Modern Packaging.

Miscellaneous

A-1 FLEXIBLE PACKAGING CONVERTER, printer of polyethylene, cellophane and paper products interested in acquiring Mid-West operation. Send replies to Box 1120, Modern Packaging.

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Closing date: 26th of second preceding month, e.g., September 26th for November issue.
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Address all communications to Classified Advertising Department,
Modern Packaging, 575 Madison Avenue, N. Y. 22, N. Y.
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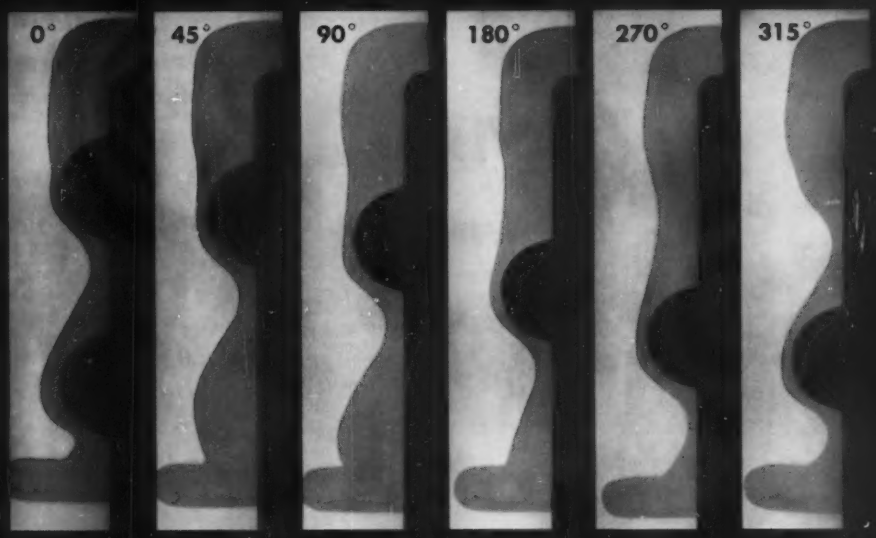
One more reason* why you should

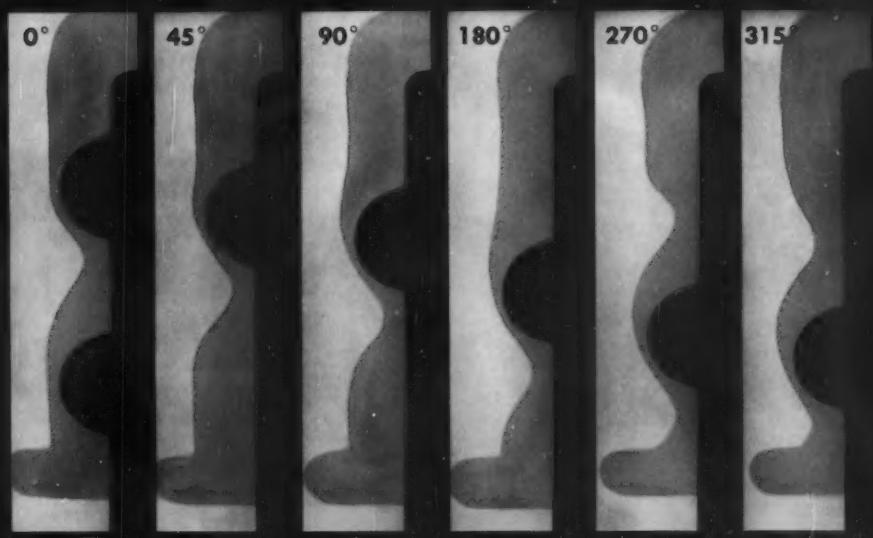
call Ball first

GLASS CONTAINERS
FOR METAL CLOSURES
PACKAGING COUNSEL



Laboratory photographs, magnified ten times, of a Ball "Deep Lok" closure on a thread gauge showing six positions of a complete turn.

Good pull down
Effective seal



Similar photographs of a competitive closure on the same thread gauge.

Poor pull down
Ineffective seal

* Compare the closure thread silhouettes above. Note how the "Deep Lok" thread design of the Ball Closure fits further under the corresponding thread of the gauge, providing maximum pull down and a more effective seal.

Is your product receiving the best possible protection from the closure you are now using? Does its thread design make possible a completely effective seal?

See the answers to these questions for yourself. At your request your Ball representative will arrange to have photographs like the above taken of your present closure. Then you can be the judge.

BALL BROTHERS COMPANY, INC., Muncie, Indiana; Chicago, Illinois; El Monte, California. *Represented in major cities throughout the United States.*

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now...

an integrated and fully automated machine for the production of small and medium size cartons in relatively small quantities—the new Cavalier Carton Maker—designed to broaden the application of the rotogravure process.

- Cut-to-print accuracy of plus or minus ten thousandths on average quality carton board.
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Champlain

Champlain Company, Inc., Harrison Avenue, Roseland, N. J.
Chicago Office: 58 Broadway, Des Plaines, Illinois
In Europe: Bobst-Champlain, Prilly-Lausanne, Switzerland.

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A BRESKIN PUBLICATION

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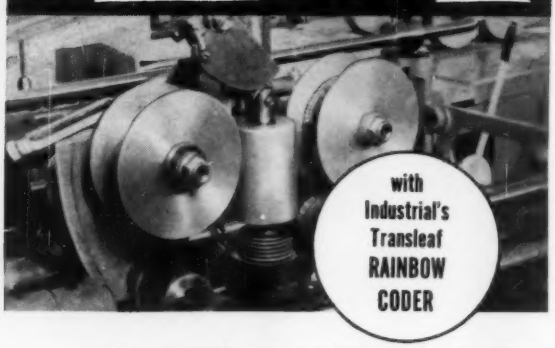

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says—**Mr. G. L. Curran,** *V. P. of Marketing*
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Acetate . . . a Celanese packaging plastic

JAGENBERG

Colletta

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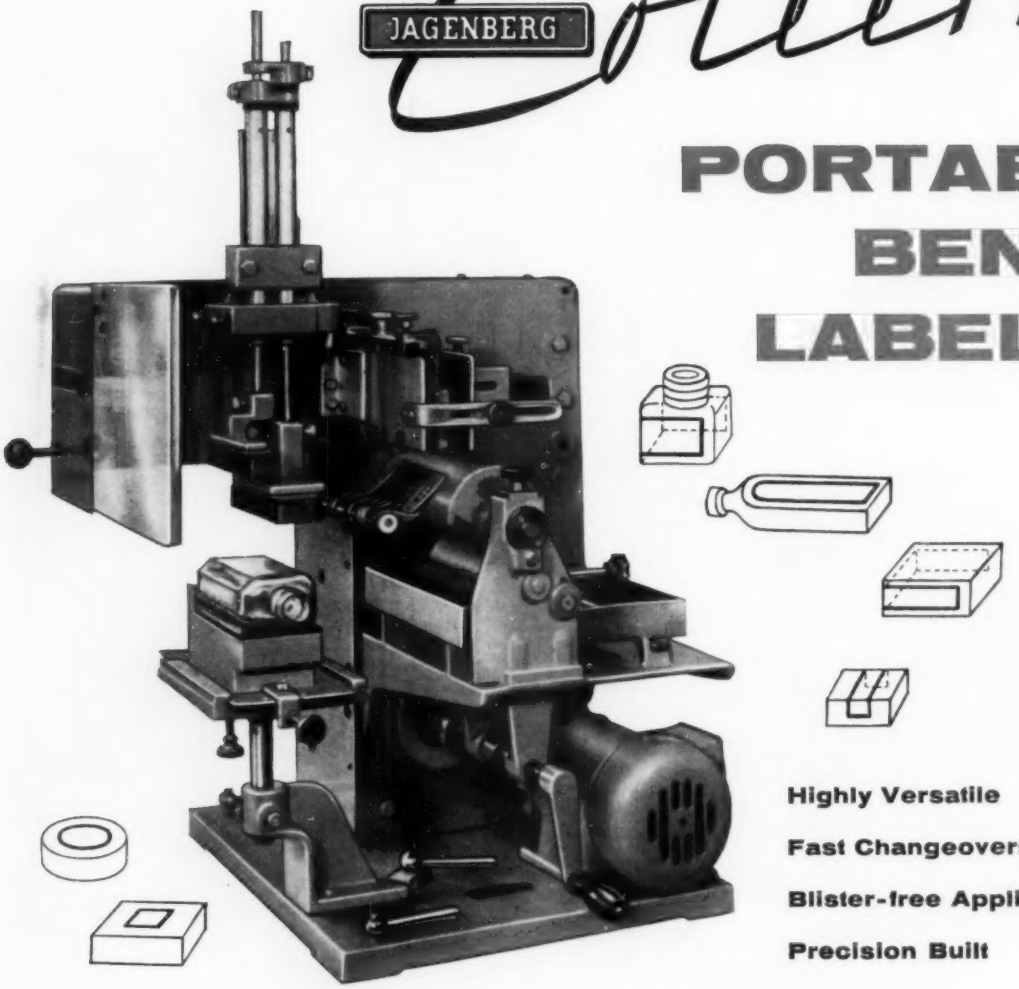

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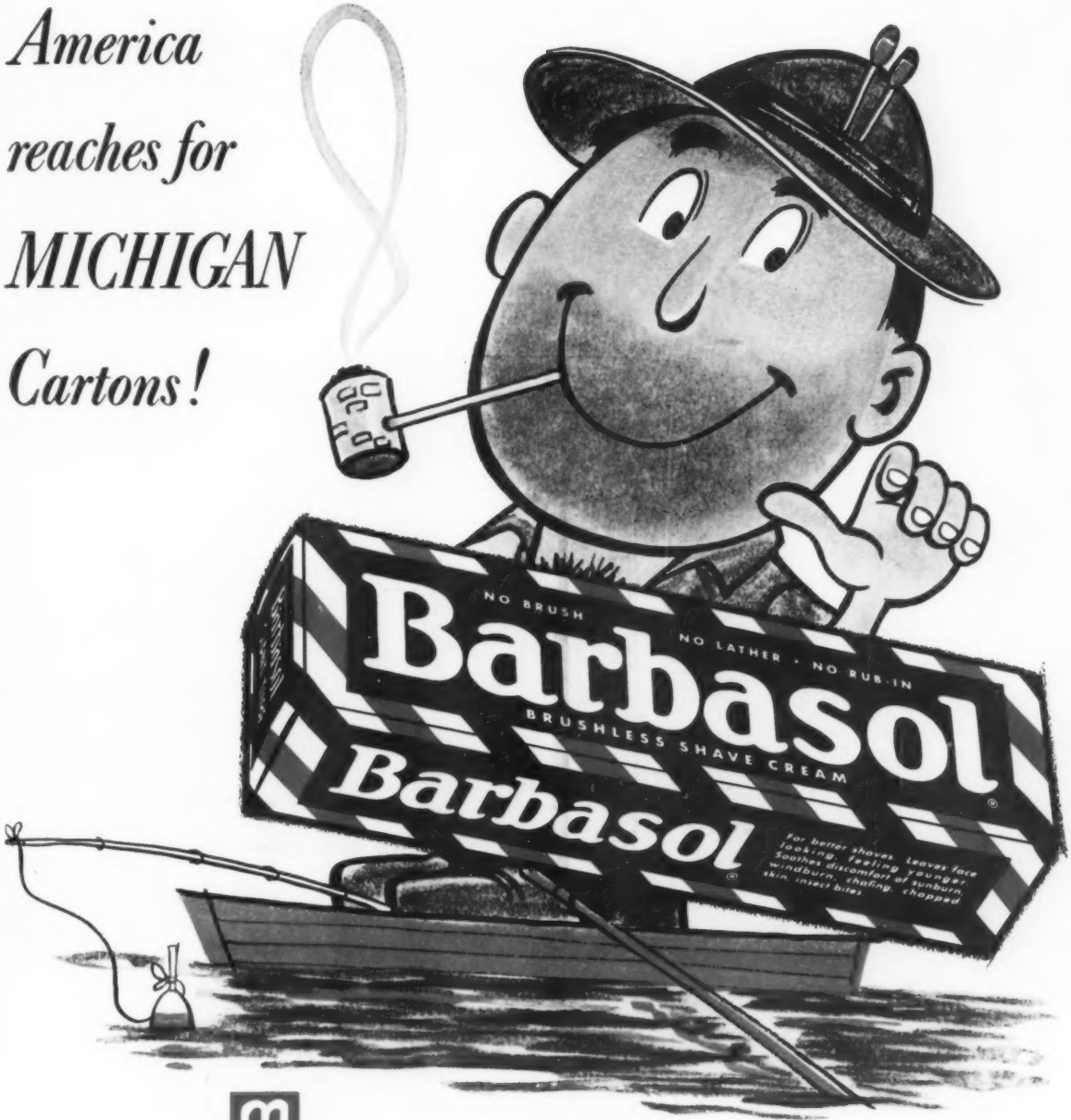
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BRUSHLESS SHAVE CREAM
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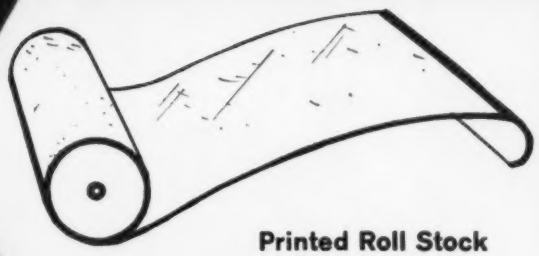
for better shaves. Leaves face looking, feeling younger. Soothes discomfort of sunburn, windburn, chafing, chapped skin, insect bites

YOU can rely on helpful personal service from your Michigan Carton salesman

MICHIGAN CARTON CO. ***Battle Creek, Michigan***



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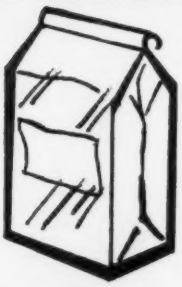

Flap-Over

FLEXIBLE PACKAGING DIVISION

CONTINENTAL CAN COMPANY

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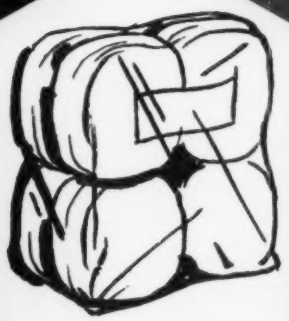
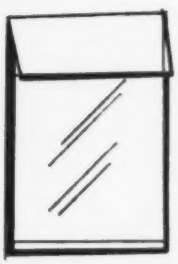
SOUTH GATE, CALIFORNIA



Bun Bag

Zip-Cord



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by Continental

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